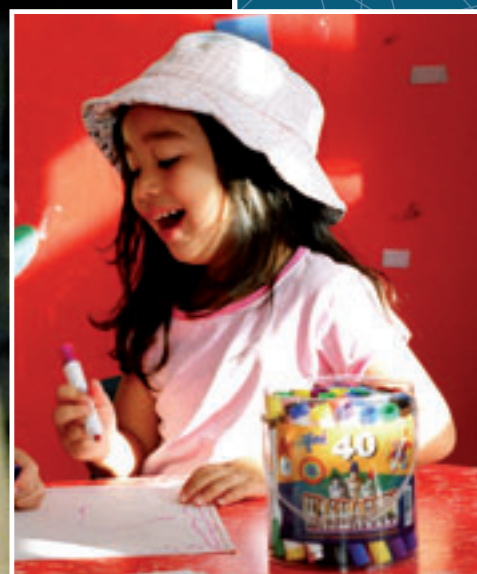


# Gifted and Talented Students

## Meeting Their Needs in New Zealand Schools



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## Foreword

*Gifted and Talented Students: Meeting Their Needs in New Zealand Schools* aims to support schools and teachers in assisting gifted and talented students to reach their full potential academically, emotionally, and socially. It has been published in response to the growing awareness that many of our gifted and talented students go unrecognised, and that those who are identified often do not take part in an educational programme appropriate to their needs.

Enabling our gifted and talented students to reach their full potential will make an important contribution to the Ministry of Education's mission of "raising achievement and reducing disparity". The revised National Administrative Guidelines provides boards of trustees and school leaders with the responsibility and authority to meet the learning needs of this group of students.

*Gifted and Talented Students: Meeting Their Needs in New Zealand Schools* is intended for principals, senior managers, and key teachers responsible for programmes for gifted and talented students. It provides information to assist with the development of a school policy and the identification of gifted and talented students. It discusses a range of principles and practices in the education of gifted and talented students, and it presents models on which schools can base their own programmes to best meet the needs of their students.

I would like to acknowledge and thank all those who have contributed their experience and expertise to the development of this publication.



**Howard Fancy**

Secretary for Education

It is my pleasure to present you with an interim updated edition of *Gifted and Talented Students: Meeting Their Needs in New Zealand Schools*. Since 2000, the Ministry of Education has been involved in a number of initiatives to improve the education of gifted and talented students. A regulatory change to the National Administrative Guidelines (NAGs), specifically NAG 1 (iii) c, effective from 1 January 2005, states that schools must: "on the basis of good quality assessment information, identify students and groups of students who have special needs, including gifted and talented students". To meet the needs of these students, schools are now explicitly required to develop and implement effective teaching and learning programmes.

This edition outlines the implications of the regulatory change and provides an updated list of recommended resources. My thanks go to those who have contributed to identifying the new publications and websites that will support schools and educators in assisting gifted and talented students to be engaged and successful in education and learning.



**Karen Sewell**

Secretary for Education

## Introduction

This book is intended for the educators of New Zealand. One of the great joys and privileges of being a teacher is sharing in the development of a young person's exceptional ability. It is equally gratifying to then observe that special ability being realised in adult achievement. Many eminent adults, when asked to identify the critical factors contributing to their outstanding accomplishments, point to support that teachers provided.

There is a growing awareness of the special needs of gifted and talented students and of the importance of providing them with an educational environment that offers maximum opportunities to develop their special abilities. There is also an increased acknowledgment that these young people represent one of our country's greatest natural resources and that failure to support them appropriately in their schooling may see this potential go unrealised.



Teachers are becoming more aware of the consequences of not attending to the needs of the gifted and talented. The research in this area is conclusive and irrefutable: failure to recognise and meet the needs of the gifted and talented can result in their boredom, frustration, mediocrity, and even hostility.

Certainly, many students are not deterred by a system that fails to support the development of their special abilities. Some of this group may compensate for an unrewarding school environment by finding fulfilment in activities beyond the school gate. However, others may choose to deny their abilities in an attempt to fit in. A significant number of our more able students simply "give up", leave school prematurely, and often never pursue those areas where they once showed so much promise.



New Zealand teachers are attuned to the needs of individual students and skilled in student-centred strategies. In addition, the national curriculum allows students to work at levels matching their abilities. The combination of these two elements has the potential to create an effective learning environment for the gifted and talented. What needs to be added is a co-ordinated school-wide approach that provides teachers with a comprehensive understanding of the needs of the gifted and talented as well as with the strategies to meet these needs.

Our National Education Guidelines require schools to assist all children to realise their full potential, to identify and remove barriers to achievement, and identify and support those students with special needs. In addition, our National Administration Guidelines require all schools to identify gifted and talented students, and to develop and implement appropriate teaching and learning strategies to meet those students' needs.

*Gifted and Talented Students: Meeting Their Needs in New Zealand Schools* has been designed to provide schools with information from which they can develop their own approaches to meeting these requirements. Consequently, the information provided is not prescriptive. It includes a range of perspectives and possibilities to help each school tailor its response to the nature and needs of its students and community.

Although many ideas included in this resource inform classroom practice, it is intended for boards of trustees and principals as well as for classroom teachers because all of them are involved in decision making at this level. Examples to illustrate strategies or to elaborate on approaches outlined in this book are provided at the Ministry of Education's Gifted and Talented Internet site at [www.tki.org.nz](http://www.tki.org.nz)

In many schools, there will be much discussion and debate about the preferred term to describe these students. The alternatives are many – students/children with special abilities; students with high potential; gifted; gifted and talented; able; more able; exceptional; and so on. The term “gifted and talented” is used here mainly because it is most widely used internationally. These terms are used interchangeably and synonymously.

Our country's gifted and talented education policy, published by the Ministry of Education in 2002, explains that gifted and talented students are those learners “with exceptional abilities relative to most other people. These individuals have certain learning characteristics that give them the potential to achieve outstanding performance”. This concept statement recognises that giftedness and talent can mean different things to different cultures and communities.

The gifted and talented education policy also supports a range of initiatives, including professional learning and support; research; and opportunities for meeting the needs of gifted and talented students, their parents, and teachers.

This resource begins with a section outlining how schools might approach the task of developing a school-wide approach for their gifted and talented students. The remainder of the book is divided into two main parts.

**Part 1** looks at definitions, characteristics, and identification of gifted and talented students. There has been no attempt to offer a single definition of giftedness and talent. Instead, schools are encouraged to take a multicategorical and multicultural approach and to include special abilities across a range of areas. Any approach must recognise that the incidence of giftedness and talent is not determined by class, culture, or gender.

**Part 2** looks at programme development and evaluation. This section explains the essential elements of programmes for gifted and talented students and describes a range of contexts in which these may be offered.

## Getting Started

**A school policy needs to answer the *why, who, what, where, how, and when* questions.**

Programmes for the gifted and talented can be tenuous in nature and can appear and then disappear within a very short space of time. This is often because the impetus for a new initiative and the responsibility for its implementation reside with a single staff member. This situation can be avoided with a school-wide commitment to catering for this group of students.

### Developing a Policy

A crucial component in establishing comprehensive and enduring provision for these students is the development of a relevant policy. While a policy does not guarantee appropriate provision in every classroom, it does go a long way to ensuring that these students' needs remain on the school's agenda. A policy also provides something against which approaches can be reviewed and evaluated.

A policy should be developed through consultation inside and outside the school. Parents of gifted students should have an opportunity to be involved. Gifted and talented students themselves can make valuable contributions to specific aspects of policy development. Very often, a school may also require an outside "expert" to guide them in this undertaking.

A school policy needs to answer the *why, who, what, where, how, and when* questions.

#### ***Why?***

A good starting place is to develop a defensible rationale for providing differentially for these students. This statement should tie in with the overall philosophy of the school.

#### ***Who?***

Defining *who* the gifted and talented are in a school population is not an easy task. However, to do this a school must first arrive at a definition, because it provides the basis for identification procedures and how gifted students are provided for. Once the definition has been reached, issues of identification can be addressed.

A second question to ask here is *who* will co-ordinate the programme in the school. Programmes for the gifted and talented have more chance of developing and enduring where there is a team approach to co-ordination and where the team includes a member of the school's senior management. It is also essential that the programme is "owned" by the school community. To this end, the team or committee responsible for developing and implementing it should consult widely to reflect the different interest groups in the school and perspectives held by members of staff.

#### ***What?***

The next stage is the setting of goals and objectives — *what* are we going to do? This part of the process is very important because it not only sets the direction of a school's efforts but also provides criteria against which these efforts can be evaluated.



Many schools have discovered the value of undertaking a gap analysis as a starting point, determining “where we are at and where we are going”. This allows them to evaluate current provisions and practices and to identify the strengths and interests of school staff and members of the local community. This approach is also an excellent way of determining what should be included in a programme of professional development.

### ***Where?***

The debate about *where* gifted and talented students are best provided for in the school often constitutes the starting point in the process of planning and development in this area. However, questions about the appropriateness of a separate class, a withdrawal programme, ability grouping, cluster grouping, and so on can only be answered in an informed way after a school has addressed the *why*, *who* and *what* questions.

The needs of the gifted and talented must be at the forefront when this matter is being decided. Too often their needs become subsumed by concerns about charges of elitism, how other children in the school might feel, or the reactions of parents of children not selected for special programmes.

### ***How and When?***

Once the aims and objectives for the programme have been decided, a plan of action needs to be developed detailing *how* these will be met. This plan should include a time frame identifying *when* things will happen. These details are essential if a school is to develop a co-ordinated and consistent approach.

Sometimes new initiatives lose their impetus because the implementation plan is too ambitious. This can occur when the direction is provided by a staff member who is both experienced and enthusiastic but who fails to recognise that some of his or her colleagues may be much less knowledgeable and somewhat diffident.

Some new developments are short lived because the vision was short term. There needs to be a long-term as well as a short-term plan of action.

The question of *how* programmes will be evaluated should be answered as part of the initial planning process. Reid (1996) reports that few New Zealand schools systematically and rigorously assess the effectiveness of their endeavours in this area. He believes this is because programme descriptions are usually brief and provide sketchy information.

A school also needs to ask the question of *how* any new initiatives will be resourced.

## Professional Development

Professional development is an essential ingredient in developing, implementing, and maintaining effective programmes for gifted and talented students. Well-planned professional development opportunities for all those involved in education will increase interest in and commitment to the education of the gifted and talented. Dettmer and Landrum (1998) remind us, in their book *Staff Development: The Key to Effective Gifted Education Programs*, that “it has been recognised for more than two decades that teachers do adopt more accepting and facilitative attitudes toward gifted students after just one course in the education of the gifted” (page 1). Since gifted education is seldom addressed (beyond a chapter, a one-off lecture, an optional paper), within pre-service teacher education – in-service professional development is vital.

Educators in New Zealand need specific training and understanding in each of the following areas:

- concepts of giftedness and talent and related behaviours;
- identification methods;
- programming options and curriculum differentiation;
- teaching methods and materials;
- working with special populations among the gifted with particular reference to gender, culture, and disability.

Any programme of professional development needs to be contextually based and to reflect current policies and practices within individual schools. There is an increasing trend towards school-based professional development, where the programme reflects the nature and needs of the individual school.

Roberts and Roberts (1986, page 141) outline areas of concern and suggested professional development focuses as follows:

- *Awareness*: arousing interest and providing information about how the gifted programme relates to other aspects of the school and curriculum.
- *Informational*: providing general information about the gifted programme and what it provides for students.
- *Personal*: providing clarification of role expectations.
- *Management*: providing direction related to day-to-day demands, such as timetabling, funding, and organisation.
- *Consequences*: providing opportunities to examine evaluation issues and refine teaching skills.
- *Collaboration*: providing time for working together, exchanging ideas, and guiding one another.
- *Refocusing*: providing opportunities for new ideas to be piloted.

The professional development may be delivered by an array of individuals, including practitioners, researchers, college of education and university teaching staff, professional consultants, members of advocacy groups, parents of gifted and talented children, cultural experts, and gifted and talented students themselves. Regardless of who the presenters are,

their skills should match the needs and goals of the intended professional development programme.

Opportunities for gifted and talented children will improve only when professional development is included as a goal – for all stakeholders – in a collaborative and consultative manner.

### Summary: Getting Started

- Frequently, educational initiatives for the gifted and talented are short-lived. This often occurs when the impetus for a new development resides with a single staff member.
- A new programme is more likely to develop and endure if it is based on relevant school policy and implemented through a team approach.
- A policy should be developed through consultation in the school and community.
- A policy for the education of gifted and talented students should address the following issues:
  - Why provide differentially for these students?
  - Who are our gifted and talented in the school, and who will co-ordinate our approach?
  - What are we going to do?
  - Where are we going to do it?
  - How and when will we do it, and how will it be resourced?
- Professional development is particularly important in this area because most teacher education pre-service programmes offer only brief introductions to educating gifted and talented students.
- Effective professional development:
  - is collaboratively planned;
  - is tailored to the nature and needs of the individual school;
  - covers conceptions, identification, programming, curriculum differentiation, teaching methods and resources, and special groups of gifted students;
  - addresses areas of concern.

## PART 1: DEFINITIONS, CHARACTERISTICS, AND IDENTIFICATION

### Who Are the Gifted and Talented?

#### A Multicategory Concept

The gifted and talented represent a wide range of students with many different abilities. Some students, for example, may have exceptional abilities in science or technology, some in art or poetry, and others in social leadership. It is now accepted that the gifted and talented are not simply those with high intelligence.

The range of special abilities that relate to the concept of giftedness and talent has become quite broad over the years and includes general intellectual abilities, academic aptitude, creative abilities, leadership ability, physical abilities, and abilities in the visual and performing arts.

#### Multicultural Perspectives

New Zealand is a multicultural society with a wide range of ethnic groups. The concept of giftedness and talent that belongs to a particular cultural group is shaped by its beliefs, values, attitudes, and customs. The concept varies from culture to culture. It also varies over time.

It is important that each school incorporates relevant cultural values into its concept of giftedness and talent. These values will also influence procedures used for identifying students from different cultural groups and for providing relevant programmes. Culturally diverse and economically disadvantaged students are grossly under-represented in programmes for the gifted and talented. Schools must make a special effort to identify talented students from these groups.

Bevan-Brown (1996) argues that concepts of special abilities for Māori should be viewed as holistic in nature, reflecting Māori values, customs, and beliefs. In her research, she found that Māori value a wide range of abilities and qualities, including spiritual, cognitive, affective, aesthetic, linguistic, artistic, musical, psychomotor, social, intuitive, creative, leadership, and cultural abilities and qualities.

It would be simplistic, however, to equate terms such as spiritual, artistic, musical, or leadership with Pākehā meanings of the terms. Māori have their own interpretations, which should be understood in their relationship to Māori culture. Māori also tend to expect these abilities and qualities to be used in the service of others.

## Concepts and Definitions

The change from a single to a multicategory concept of giftedness and talent has been paralleled by changes in the concept of intelligence itself. No longer seen as a single entity, it is now viewed in terms of multiple intelligences.

Foremost amongst the proponents of multiple intelligences is Gardner (1993), who has postulated eight intelligences:

- Logical-mathematical
- Linguistic
- Bodily-kinesthetic
- Spatial
- Musical
- Interpersonal
- Intrapersonal
- Naturalistic

In many ways, these can be seen as areas of special ability rather than intelligences. In fact, Gardner defines these intelligences as sets of abilities, talents, or mental skills that enable individuals to solve problems or fashion products in such a way as to be useful in one or more cultural settings. Gardner is sensitive to the special abilities that different cultures value most highly. Assessment procedures and curriculum models have been developed around these special abilities or intelligences.

There are hundreds of definitions of the term “gifted and talented”. Generally speaking, they can be classified as either conservative or liberal. Conservative definitions are usually based on a single criterion, such as intelligence, and identification is based on a high IQ score. These definitions usually limit giftedness and talent to a small percentage of the school population (for example, 1 to 3 percent).

Liberal definitions, on the other hand, are based on a broad range of criteria. They adopt an inclusive approach that accepts a fairly high percentage (for example, 10 to 15 percent) of the school population as having special abilities. Contemporary definitions tend to avoid stating any specific percentage of the school population as being gifted or talented because schools differ so much in their interpretation of variables associated with the concept.

Some definitions accept *potential* performance as part of their criteria, whereas others focus on *demonstrated* performance. Whichever way you take it, the key issue for teachers is the need to offer challenging learning experiences so that potential can be realised.

Several definitions view *behaviours* as central to the concept. Here, it is the characteristics and behaviours of people that illustrate the giftedness and talent, for example, “*Gifted is, as gifted does*” (Hill, 1977).

**Some definitions accept *potential* performance as part of their criteria, whereas others focus on *demonstrated* performance. Whichever way you take it, the key issue for teachers is the need to offer challenging learning experiences so that potential can be realised.**

Some important definitions have affected attitudes to giftedness and talent over the last three decades. Some of these are:

***The Marland Report (1972)***

This report was presented to the United States Office of Education and had a significant impact on gifted education. It contained the first truly multicategory definition.

***Renzulli (1978)***

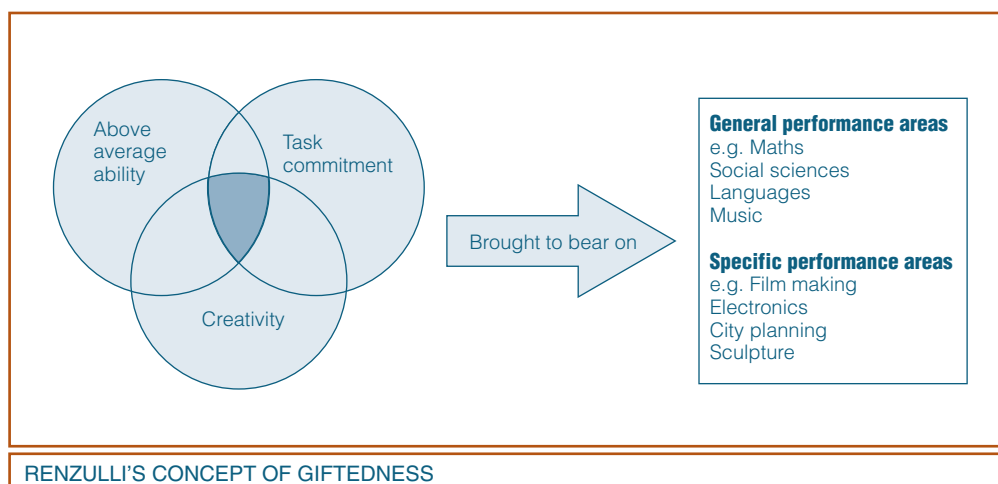
Renzulli developed a definition of giftedness based on the interaction between three basic clusters of human traits:

- above average ability
- a high level of task commitment
- a high level of creativity.

Renzulli and Reis (1985) claim that gifted and talented children “are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance” (page 28).

Furthermore, they emphasise that such children “require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs” (page 28).

Renzulli’s concept of giftedness is represented in the diagram below:



***The New Zealand Department of Education (1986)***

In 1986, the New Zealand Department of Education published a draft policy statement for children with special abilities, which was very similar to the Marland Report. It suggested that teachers examine a wide range of areas, including:

- specific academic, technical, or mechanical aptitude and achievement;
- creative, productive, or intuitive thinking;
- cultural arts: verbal, visual, performing;
- general intelligence;



- psychomotor skills;
- cultural traditions, values, and ethics;
- social skills and leadership;
- aesthetics.

***The Javits Gifted and Talented Act (1988) and the United States Office of Educational Research and Improvement Report on National Excellence and Developing Talent (1993)***

The Javits Act, in the United States, defined gifted and talented students as those who give evidence of high-performance capability in intellectual, creative, artistic, leadership, or specific academic fields and who require programmes not ordinarily provided by the school in order to fully develop such capabilities.

While there is little new here, Javits began to push for giftedness and talent as a “natural resource vital to the nation’s future” that is, for the concept of national talent. This trend was taken up more vigorously by a Javits advisory panel and by the US Office of Educational Research and Improvement, which produced a report entitled *National Excellence and Developing Talent* (1993). The report dropped the term “gifted” in favour of “exceptional talent”. It emphasised the need to identify talent in students across all cultural groups and socioeconomic strata and in all areas of human endeavour. It also stated that supplying rich and varied learning experiences is a productive way of encouraging talent development.

**National Excellence into Practice: Suggestions to Schools**

1. Seek variety in the range of abilities of talented students.
2. Enable equality of opportunity and access to provisions free from cultural and other biases.
3. Identify potential as well as demonstrated achievement.
4. Use a variety of assessment procedures for identifying students with exceptional talents.
5. Assess the motivation of learners so as to take account of the drive and passion which plays a key role in accomplishments.

(United States Office of Educational Research and Improvement, 1993)

**The Differentiation of Giftedness and Talent**

Often the terms “gifted” and “talented” are joined together as “gifted and talented”. Sometimes the term “G/T” is used to express this single-concept approach. Where the term is differentiated, giftedness is usually associated with high intelligence or aptitude, whereas talent is usually related to a high level of performance in such areas as music, art, craft, dance, or sport.

Gagné (1996) has argued consistently, however, for differentiating the two terms by claiming that giftedness relates more to aptitude domains (intellectual, creative, socioaffective, perceptual/motor) while talent is associated more with outstanding achievements in a variety of fields of human endeavour (academic, technical, artistic, interpersonal, and athletic fields).

Gagné claims that catalysts such as motivation, personality traits, or education mediate the transition from giftedness to talent. Catalysts make it happen. Gagné claims that there are two broad groups of catalysts. The first group are *intrapersonal*, such as physical (health) and psychological (motivation, volition, personality). The second group are *environmental* catalysts such as surroundings (physical, social), people (parents, teachers, peers, mentors), undertakings (activities, courses, programmes), and events (encounters, awards, accidents).

Gagné links talent to excellence and outstanding performance. Talent is reserved for a minority of individuals from a larger pool of competent people.

### Summary: Who are the Gifted and Talented?

- There has been a trend away from defining the gifted and talented in terms of a single category (for example, high IQ) towards a multicategory approach, which acknowledges a diverse range of special abilities.
- Multicultural values, which reflect a range of attitudes to abilities and qualities, form an important component of any concept of giftedness and talent. Identification procedures and programme content should equally incorporate multicultural perspectives.
- Social, emotional, and motivational factors are acknowledged as important aspects of giftedness and talent.
- Behavioural characteristics such as advanced reading and language skills, early abstract thinking, and exceptional levels of knowledge, curiosity, and motivation are helpful in identifying gifted and talented students.
- It is important to recognise potential as well as demonstrated performance. Educators should offer rich and challenging experiences to help realise potential.

## Characteristics of Gifted and Talented Students

It is important to recognise that the gifted and talented are not a homogeneous group and that every student possesses a unique blend of traits. However, when we look at gifted and talented students as a group, we can see clusters of common characteristics. Some students show evidence of these characteristics across a number of areas, while in others such evidence may be confined to a single endeavour. In the more highly gifted, these traits may be much more marked or intense.

With many gifted and talented students, the behaviours indicating their exceptional ability may not be readily observable. Some students may not have been provided with experiences in the areas of their giftedness or may not have had opportunities to demonstrate their ability. Others, for a variety of reasons, may be underachieving or deliberately hiding their giftedness. Some gifted and talented students may have learning difficulties that mask their real ability.

Almost every text ever written on the subject of giftedness contains a list of characteristics associated with the concept. As definitions of giftedness have broadened, so too have the categories of characteristics. Schools should view the list below (McAlpine and Reid, 1996) as a starting point in this area. Each school must develop a set of characteristics that reflects its own definition of, and approach to, the concept of giftedness and talent.

**Each school must develop a set of characteristics that reflects its own definition of, and approach to, the concept of giftedness and talent.**

Note that no one gifted student is likely to possess all the following characteristics. It would be possible for a student to show clear evidence of all, or nearly all, the behaviours in one category but few in another.

### **Learning Characteristics**

- Displays logical and analytical thinking
- Is quick to see patterns and relationships
- Masters information quickly
- Strives for accurate and valid solutions to problems
- Easily grasps underlying principles
- Likes intellectual challenge
- Jumps stages in learning
- Seeks to redefine problems, pose ideas, and formulate hypotheses
- Finds as well as solves problems
- Reasons things out for her- or himself
- Formulates and supports ideas with evidence
- Can recall a wide range of knowledge
- Independently seeks to discover the why and how of things

### **Creative Thinking Characteristics**

- Produces original ideas
- Displays intellectual playfulness, imagination, and fantasy
- Creates original texts or invents things
- Has a keen sense of humour and sees humour in the unusual
- Generates unusual insights
- Enjoys speculation and thinking about the future
- Demonstrates awareness of aesthetic qualities
- Is not afraid to be different
- Generates a large number of ideas
- Is prepared to experiment with novel ideas and risk being wrong
- Seeks unusual rather than conventional relationships

### **Motivational Characteristics**

- Strives for high standards of personal achievement
- Is self-directed
- Is highly self-motivated and sets personal goals
- Is persistent in seeing tasks to completion
- Becomes committed to and absorbed in tasks
- Tends to be self-critical and evaluative
- Is reliable
- Prefers to work independently

### Social Leadership Characteristics

- Takes the initiative in social situations
- Is popular with peers
- Communicates well with others
- Actively seeks leadership in social situations
- Shows ability to inspire a group to meet goals
- Persuades a group to adopt ideas or methods
- Is self-confident
- Is adaptable and flexible in new situations
- Actively seeks leadership in sporting activities
- Is socially mature
- Is willing to take responsibility
- Synthesises ideas from group members to formulate a plan of action

### Self-determination Characteristics

- Is sceptical of authoritarian pronouncements
- Questions arbitrary decisions
- Pushes teachers and adults for explanations
- Displays a precocious interest in “adult” problems
- Is reluctant to practice skills already mastered
- Is easily bored with routine tasks
- Expresses ideas, preferences, and opinions forthrightly
- Relates well to older children and adults and often prefers their company
- Asks searching questions

As pointed out in the last chapter, cultures vary in the way they define giftedness and talent. This affects the characteristics seen as indicating exceptional ability. Some multicategorical approaches to defining giftedness and talent are inclusive and flexible enough to include many culturally specific abilities. However, as Bevan-Brown (1996) notes, the important difference may exist in the *interpretation* of a special ability. For example, Māori value three different styles of leadership: the “up front” style, similar to that valued by Pākehā; leadership-by-example; and behind the scenes leadership. This illustrates the importance of schools consulting with their community when developing sets of characteristics to guide identification.

### Seeing Beyond the Positive

Most of the behaviours listed above are essentially positive in nature. However, it is also very important to examine whether behaviours that may be considered much less acceptable reflect signs of giftedness. Sometimes these may be directly related to a special ability, for example:

- A student who can recall a wide range of knowledge may dominate class discussions.
- A student who displays intellectual playfulness, imagination, and fantasy may be constantly inattentive or off-task.
- A student who strives for accurate and valid solutions to problems may repeatedly correct other students and the teacher.

**A student who displays intellectual playfulness, imagination, and fantasy may be constantly inattentive or off-task.**

- A student who has a keen sense of humour and sees humour in the unusual may use it inappropriately to poke fun at others.
- A student who strives for high standards of personal achievement may avoid tasks where there is a risk that this may not be attained.
- A student who prefers to work independently may actively resist working with others.

Often, how a teacher perceives the behaviour of a gifted student reflects how much he or she understands gifted students, and empathises with them. For example, some teachers celebrate the gifted student's tendency to generate unusual insights; others will find such behaviour disruptive. Some teachers may welcome a gifted student's questioning of arbitrary decisions; others will perceive it as disrespectful.

Sometimes less acceptable behaviour may be an expression of frustration. Very often, a student who achieves quick mastery of information, easily grasps underlying principles, likes intellectual challenge, and jumps stages in learning becomes extremely bored and frustrated when required to work on the same programme and at the same speed as the rest of the class. This student may become disruptive, act as a "class clown", or develop a total lack of interest in schoolwork.



## Subtypes of Giftedness

Betts and Neihart (1988) suggest that gifted and talented students can be grouped into six categories, which are summarised below. These profiles are especially useful in identifying older gifted and talented students whose special abilities are less likely to be evidenced in their schoolwork.

1. The **Successful** Gifted  
These students achieve highly at school and are the group most likely to be identified as gifted and talented. They are conforming, eager for the approval of others, and perfectionistic. They lack autonomy and assertiveness and avoid taking risks.
2. The **Challenging** Gifted  
These students are highly creative but frustrated, bored, questioning, and sometimes rebellious. They do not conform to the school system and often challenge school rules and conventions.
3. The **Underground** Gifted  
These students deny their abilities in order to fit in. They may be insecure, shy, and quiet, avoid taking risks, and resist challenges. Many are never identified as gifted.
4. The **Dropout** Gifted  
These students are resentful and angry because they feel that the system has failed to meet their needs. They are often perceived as “rebellious loners” and can be disruptive or withdrawn. They fail to complete schoolwork, and their levels of achievement fall well below their ability.
5. The **Double-labelled** Gifted  
These students are gifted but also have a physical or sensory disability or a learning difficulty. Often their giftedness goes unrecognised because people fail to see past their disability. They can become angry and frustrated and may feel powerless.
6. The **Autonomous** Gifted  
These students are confident, independent, and self-directed. They are intrinsically motivated and willing to take risks. They set goals for themselves and take responsibility for their own learning.

Bevan-Brown (1999) suggests that a seventh profile could be added to this list:

7. The **Culturally Diverse** Gifted  
These are students who are not identified as having exceptional ability. Some may go unrecognised because their performance generally is affected by low self-esteem and low teacher expectations. Their gifts and talents may not be recognised or valued within their school, or the values and behaviours of their culture may discourage them from displaying their abilities.

**The consensus of opinion is that, as levels of giftedness increase, so does the need for appropriate support in the emotional and social areas.**

### **Emotional and Social Development**

Many gifted and talented students, probably the majority, give little indication that their emotional and social development is anything but normal. Some of this group may experience considerable difficulties in these areas, but they use their exceptional ability to skilfully disguise their struggles. In other gifted students, these issues are far more obvious.

In the past, educating gifted and talented students has been dominated by concerns about their learning. More recently, attention has been paid to aspects of their emotional and social development. The consensus of opinion is that, as levels of giftedness increase, so does the need for appropriate support in the emotional and social areas. It is important to recognise that the emotional and social development of these children is not necessarily problematic on its own but that it can become problematic if they find themselves out of step with their peers.

One way of identifying the emotional and social issues confronting gifted and talented students is to look at what they say about themselves. The following “eight great gripes of gifted kids” align closely with the areas of vulnerability most frequently described in the research (Schmitz and Galbraith, 1991).

- No one explains what being gifted is all about – it’s kept a secret.
- Friends who understand us are few and far between.
- We feel different.
- School is too easy, too boring.
- We feel overwhelmed by the number of things we can do in life.
- Parents, teachers, and friends expect us to be perfect all the time.
- Kids often tease us about being smart.
- We worry about world problems and feel helpless to do anything about them.

### **Self-definition**

Gifted and talented students frequently place unrealistically high expectations on themselves, and in some instances, others have unrealistically high expectations of them. This can lead to gifted students feeling they have little control over their lives. They may avoid tasks where high achievement is not guaranteed, or they may retreat to a world of fantasy.

Gifted and talented students often have strong academic self-concepts, but their social self-concepts are sometimes poor. Research indicates that gifted students have mixed feelings towards their giftedness. While gifted students may be positive about being labelled gifted, they sometimes feel their peers and teachers have negative views of them.

### **Uneven Development and Alienation**

The intellectual, emotional, and physical development of gifted and talented students is often uneven. This “asynchronous” development means that their experiences are measurably different from those of their peers, which may lead to feelings of not fitting in. These feelings can become particularly acute in early adolescence, and gifted and talented students at this stage may mask their abilities in order to gain acceptance.

Frequently, advanced intellectual development results in gifted and talented students having a much greater awareness about global issues than their peers. This may cause them to develop an intense, serious, or cynical outlook on life.

### Perfectionism

Perfectionism can be described as a compulsive need to achieve and be the very best. Gifted and talented students who achieve highly will naturally attract positive feedback from parents and teachers. Some students become dependent on this affirmation for their self-definition. It is not uncommon for parents, teachers, and peers to unwittingly create an environment where the gifted student is expected to be perfect.

Perfectionists will often avoid experiences that pose a risk of failure. Perfectionism may be accompanied by intense reactions to criticism, consistent failure to complete tasks, extreme anxiety in test situations, low risk-taking, nervous disorders, ulcers, and eating difficulties. This is called disabling perfectionism.

However, perfectionism can be a positive quality that provides the impetus for achieving excellence. This is termed enabling perfectionism.

### Adult Expectations and Role Conflicts

It is not unusual for gifted and talented students to feel that the expectations of them are unrealistic. Often such expectations occur because these students display a level of maturity beyond their chronological age. They also receive mixed messages from adults and peers about academic achievement and social behaviour. Some gifted and talented students may hide their giftedness in order to obtain peer acceptance. This tension between achievement and acceptance is particularly strong for gifted and talented girls in early- to mid-adolescence.

### Sensitivity

Many exceptionally gifted and creatively gifted individuals possess high levels of emotional sensitivity, or what Dabrowski (1967, 1972) refers to as emotional “overexcitability”. Piechowski (1997) refers to this as “emotional giftedness”, and reports that such people demonstrate a heightened awareness of the needs of others, a strong sense of right and wrong, and a sensitivity to social injustices. They are often independent thinkers, non-conformist, and self-directed. In the classroom, they may have a preoccupation with social, moral, and ethical issues and often act on their convictions in these areas. They may resist tasks that they perceive as insignificant or irrelevant.

Intensely sensitive students may experience soaring highs and dark lows. During the high periods, they may experience great joy, energy, and stimulation. During the low periods, they may become shy, anxious, and fearful. They may have feelings of helplessness and despair as they contemplate the discrepancy between the real and the ideal – the way one is and the way one “should be”.

**Frequently, advanced intellectual development results in gifted and talented students having a much greater awareness about global issues than their peers. This may cause them to develop an intense, serious, or cynical outlook on life.**

**Overexcitabilities may include rapid speech, marked excitation, intense physical activity, pressure for action, compulsive talking and chattering, impulsive actions, wanting to be in the limelight, mixing truth and fiction, and extremes of emotion.**

### **Giftedness and ADHD**

Dabrowski's theory (1967) is very useful for understanding the emotional development of gifted individuals. He observes that giftedness is frequently marked by a set of primary intensities that he calls overexcitabilities. These overexcitabilities may include rapid speech, marked excitation, intense physical activity, pressure for action, compulsive talking and chattering, impulsive actions, wanting to be in the limelight, mixing truth and fiction, and extremes of emotion. It has been pointed out that these characteristics run very close to those associated with attention deficit hyperactivity disorder (ADHD). There is some concern overseas that significant numbers of gifted and talented students are being misdiagnosed as having ADHD. Separating the two is not an easy task.

### **Underachievement**

Much has been written about the underachievement of gifted and talented students. There is almost universal agreement that a high proportion of them fail to achieve to the level of their ability.

The discrepancy between ability and achievement in many gifted and talented students is disturbingly large. It is important to identify these students and to provide support to help them reverse such patterns of low achievement.

Some profiles of underachieving gifted students are:

- the rebel, who will not or cannot see the value of many classroom tasks;
- the conformist, who opts for mediocrity so as not to appear different;
- the perfectionist, whose self-esteem depends on achievement, who has a fear of failure, and who avoids taking risks;
- the struggling student, who progresses through the early years of school with ease but cannot cope with a more challenging curriculum;
- the victim, who takes little responsibility for his or her learning and who blames lack of success on others or the system;
- the distracted learner, whose personal problems or responsibilities make it difficult to give priority to schoolwork;
- the bored student who may be lacking challenge;
- the complacent learner, who is happy with his or her own performance even though the expectations of parents and teachers are much higher;
- the single-sided achiever, who chooses to achieve in selected endeavours.

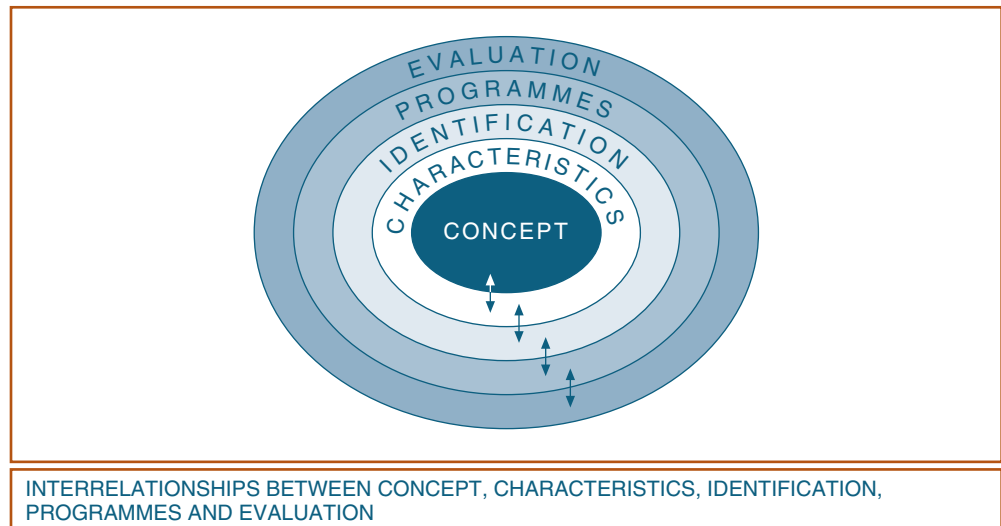
(Adapted from Heacox, 1991, pages 19–20)

### Summary: Characteristics of Gifted and Talented Students

- As definitions of giftedness have broadened, so too has the diversity of characteristics included in each concept. Each gifted and talented student is unique, with his or her own set of behaviours and characteristics. It is important for schools to note behaviours and characteristics that are valued by different cultural groups. It is also imperative that schools develop a set of characteristics that reflects their individual definition of, and approach to, giftedness and talent.
- Characteristics of the gifted and talented student can be grouped under the following headings:
  - learning characteristics
  - creative-thinking characteristics
  - motivational characteristics
  - social leadership characteristics
  - self-determination characteristics.
- While most characteristics of the gifted and talented are positive in nature, some characteristics typical of the gifted and talented can be less acceptable. For example, a student who can recall a wide range of knowledge may dominate class discussion. A student who prefers to work independently may actively resist working with others.
- The emotional and social development of most gifted and talented students is within the bounds of normality. However, for some, emotional and social difficulties arise as they progress through life. It is important to recognise that the emotional and social development of these students is not necessarily problematic on its own but can become problematic if they find themselves out of step with their peers.
- Gifted and talented students often have strong academic self-concepts but weaker social self-concepts.
- Gifted and talented students are sometimes characterised by a sense of perfectionism — a compulsive need to achieve at the highest level and do the very best work possible.
- Gifted and talented students often display high levels of sensitivity, which they may direct to a strong sense of right and wrong and social justice. In the classroom they may have a preoccupation with social, moral, and ethical issues and will often act on their own convictions in these areas.
- The behavioural characteristics of some gifted and talented children closely resemble those associated with attention deficit hyperactivity disorder (ADHD).
- With many gifted students, there is a significant discrepancy between their ability and their performance. The first step in reversing this underachievement is to identify students in this category.

## Identification of Gifted and Talented Students

While the identification of gifted and talented students is often ranked the number one issue in the field of gifted education, it should never be seen in isolation or viewed as an end in itself. Rather, it should be a means to an end – that is, a means to the development and implementation of appropriate educational programmes.



The identification process also takes note of the major criteria highlighted in definitions of giftedness. In a way, identification is a mediating link between definition and programmes. There should always be a good match between the three elements of definition, identification, and programme.

It is essential that there is a co-ordinated and school-wide approach to identification. Principles and practices of identification can then be consistent across the school. Furthermore, it is helpful if the process of identification is ongoing.



### Principles of Identification

- Identification should *begin* early (that is, during early childhood or at least during the junior classes at primary school). Because of the developing nature of young children's abilities and interests teachers should be cautious of any "labelling" at this stage but rather should offer interesting and challenging educational experiences through a responsive learning environment.
- There should be *open communication* between parents/caregivers, students, teachers, the principal, and the Board of Trustees over the identification process.
- Identification should be a *continuous process*. Students' interests, abilities, and personalities are constantly changing, so teachers need to be alert to emerging abilities and talents. A responsive learning environment that offers challenging experiences is in itself a catalyst for the identification of new abilities.
- Identification should be a *means to an end* and not an end in itself. It is counterproductive to spend long periods of time trying to identify the "right" child for a particular programme at the expense of time spent on developing appropriate programmes for a wider group of students.
- Identification should be as *unobtrusive* as possible and a natural part of the student's learning environment. Large "big bang" identification programmes with a battery of tests administered by outside experts are seldom necessary or appropriate.
- Using a *team approach*, where a number of teachers co-ordinate the identification programme on a school-wide basis, is an effective strategy. Teachers may also obtain input from others, such as parents and representatives from the child's whānau and iwi.
- Identification programmes should be alert to the *hidden gifted or under-represented groups*. These include minority groups; different ethnic groups; those for whom English is a second language; underachievers; those with learning, sensory, and physical disabilities; and those from lower socio-economic groups. Some attention should also be given to gender differences.
- A *multimethod* approach, which co-ordinates different methods of identification for students with special abilities in a particular domain (for example, creativity) should be used. Identification should not depend on just one method alone but employ a variety of different approaches.

### Broad Approaches for Identifying the Gifted and Talented

Broadly speaking, there are two different philosophies of identification. One is the formal data-gathering approach, and the other is the responsive learning environment approach. In the first, a team of professionals uses a systematic, school-wide approach that includes a battery of tests and rating scales. The identification process usually takes one or two months, with programmes for the identification of the gifted and talented being comprehensive, carefully planned, and set in place for a year or more.

In the second approach the teacher is a key catalyst for setting up challenging learning experiences that encourage those with special abilities to “surface”. The teaching programme offers opportunities for higher level thinking, creative thinking, and original student research. Since the responsive environment approach operates in a mainstream context, its effectiveness depends greatly on the teaching abilities of the classroom teacher. This method reflects an inclusive, liberal philosophy of identification, where there are no “winners” or “losers”.

## Methods of Identification

### *Teacher Nomination*

This is one of the most commonly used methods of identification, and its effectiveness varies enormously. Identification of gifted and talented students improves when teachers are informed of the nature and purpose of the programme for gifted and talented students. Teachers are likely to support their judgments with the help of tools such as checklists, teacher observation scales, and student portfolios.

### *Rating Scales*

Rating scales can help teachers identify gifted and talented students by focusing on typical behavioural characteristics. Without rating scales some of these characteristics might otherwise be overlooked.

The *Teacher Observation Scales for Identifying Children with Special Abilities* (McAlpine and Reid, 1996) has been developed with the assistance of classroom teachers throughout New Zealand. The scales are designed for middle primary, intermediate, and junior secondary school levels. The accompanying *Teachers' Handbook* contains information on the kinds of students for whom the scales were designed, when the scales should be used, the content of the scales, information on scoring, and technical information on reliability and validity. The five scales relate to:

- learning characteristics;
- social leadership characteristics;
- creative-thinking characteristics;
- self-determination characteristics;
- motivational characteristics.

### *Standardised Tests*

Standardised tests have a fixed set of test items; specific directions for administration and scoring; and norms, based on a representative sample. Sometimes norms allow for comparing an individual's test score with those of other special norm groups, such as the gifted and talented.

Standardised tests of one form or another are amongst the more commonly used measures for identifying the gifted and talented. Some tests used for this purpose are:

- tests of intelligence or scholastic ability
- tests of achievement.

### *Tests of Intelligence or Scholastic Ability*

These tests can be classified into (i) individual tests or (ii) group tests. Individual tests,

such as the Stanford-Binet Intelligence Scale and the Wechsler Intelligence Scale for Children – Revised (WISC-R), are administered orally by qualified psychologists. Subjects reply orally to most questions. The WISC-R yields a verbal IQ, a performance IQ, and a student profile derived from all the subtest scores. A full-scale IQ is also given.

Group tests of scholastic ability, such as the Test of Scholastic Abilities (TOSCA), can be administered by teachers. Students read the test items and write their answers. Group tests of scholastic ability may be appropriate for initial screening but are unsuitable for children with reading difficulties and for some children from different ethnic groups.

Tests of intelligence can also be classified as (i) verbal or (ii) non-verbal. The Standard Progressive Matrices (with New Zealand norms) is an example of a non-verbal test. It can be useful for children from different cultural and ethnic groups and for children for whom English is a second language.

Identification should never rely on intelligence tests alone, whether group or individual, but should include other forms of evidence from other methods.

### ***Tests of Achievement***

Standardised tests of achievement are sometimes used for initial screening, particularly in intermediate and secondary schools. The New Zealand Council for Educational Research (NZCER) series of Progressive Achievement Tests (PAT) in reading, mathematics, and listening comprehension can be useful for initial screening.

Most standardised achievement tests do not have enough items at the higher end of the scale to challenge gifted and talented students. That is, they have too low a ceiling. Furthermore, they emphasise convergent rather than divergent thinking.

Standardised tests have both advantages and disadvantages as instruments for identifying the gifted and talented. Some of the advantages are high reliability, relatively high validity, and the existence of national norms. They are also relatively inexpensive (as group tests) and are useful for initial screening. However, some standardised tests, such as the Torrance Tests of Creative Thinking, lack validity, while others have a low ceiling and a cultural, and gender bias. Some standardised tests are inappropriate for students with reading and language difficulties.

### ***Teacher-made Tests***

Some teachers are well qualified to design tests of their own. Some of these tests can be targeted towards students with special abilities in specific curriculum areas. They may contain a high percentage of items at the upper level of Bloom's Taxonomy (see Curriculum Models, Part 2), as well as some open-ended and divergent-thinking items. Some teachers also develop local norms.

### ***Portfolio Assessment***

Student portfolios are a useful form of assessment and can be helpful in identifying gifted and talented students. They have the advantage of focusing on the individual child's performance. Portfolios offer opportunities for examples of "best performance" and can show systematic evidence of student achievement over time. They also allow for a rich variety of

**Identification should never rely on intelligence tests alone, whether group or individual, but should include other forms of evidence from other methods.**

**Peer nominations can be effective for identifying students who show special abilities both inside and outside the classroom (for example, sporting abilities, musical ability, social leadership, community service, business acumen, or perhaps a special interest in science).**

student choice in terms of content and learning style and encourage higher levels of thinking and reflective practice. The reliability and validity of portfolio assessment, however, remains problematic because the assessment of them is subjective.

#### ***Parent Nomination***

Parents and caregivers have a wealth of knowledge about their children that can be useful in the identification process. While most of this knowledge is based on experiences outside the classroom, insights into the child's motivation, interests, attitudes, and special abilities may be relevant to some programmes.

Some schools have parent/caregiver interview forms that contain questions related to examples of advanced development, such as early reading, advanced language skills, advanced reasoning ability, and intellectual curiosity, which can be precursors of giftedness. Parent judgments are particularly important when students from minority ethnic groups are being considered.

While most parents/caregivers may have a realistic understanding of their child's performance compared with that of others of the same age, some parents do not.

#### ***Self-nomination***

Self-nomination is a useful form of identification for some educational programmes. It is valid for identifying areas of unique special ability and interest, such as computers, poetry, musical ability, and social and ethical concerns. Self-nominations have been found to be useful at the secondary school level. This approach can also give valuable insights into student self-concepts, self-esteem, attitudes, and values.

Self-nominations can be facilitated through teacher-student interviews or through interest inventories and questionnaires, which list a wide range of special interests. Self-nominations can, however, be subject to bias in that some students lack a realistic appraisal of their own abilities. On the other hand, some students may be reticent to put their name forward despite having exceptional abilities. This may be particularly the case with students from Māori and Pacific Islands cultures.

#### ***Peer Nomination***

Peer nominations can be effective for identifying students who show special abilities both inside and outside the classroom (for example, sporting abilities, musical ability, social leadership, community service, business acumen, or perhaps a special interest in science).

Teachers can assist students using peer nominations by suggesting relevant attributes and behaviours that match some dimensions of giftedness and talent. For example, in the area of creativity, teachers may develop peer nomination forms with such questions as, "Who, in your class, comes up with the most clever and original ideas?" Sometimes make-believe questions can be used, such as "If the class were stranded on a desert island, who would be likely to come up with the best ideas to make life enjoyable?" Teachers should encourage students to focus on specific traits related to giftedness rather than simply nominating their best friends.

Peer nomination can be used in conjunction with self-nomination and teacher nomination.

Some teacher rating scales for identifying gifted and talented students also suggest that peer nomination be used in tandem with the teacher rating scale.

For example, *Teacher Observation Scales for Identifying Children with Special Abilities* (McAlpine and Reid, 1996) suggests that teachers ask students to nominate two or three students in their class whom they think have special abilities in each of the five scales.

They might ask, “Who, in your class ...

- solves difficult problems quickly and easily? (learning scale)
- makes a good leader? (social leadership scale)
- has the most original ideas? (creative-thinking scale)
- expresses their own ideas forthrightly? (self-determination scale)
- works well on their own? (motivational scale).”

Peer nominations made on the basis of such questions can then be compared with the results of using the scales. If self-nominations are also used, the resulting triangulation increases the reliability of the results.

It is important that peer nomination forms consider key areas of behaviour that closely relate to the concept of giftedness and talent, including behaviours and values that are relevant to different cultural and ethnic groups. Peer nominations can be helpful in identifying students with special abilities from minority cultural groups, and students with disabilities.

## Special Groups and Identification

### *Students from Diverse Cultures*

Many of the more commonly used methods of identifying gifted and talented students — particularly standardised tests of intelligence and achievement — are often inappropriate for and ineffective in identifying students from minority cultures. This is true, for example, in relation to Māori students (Bevan-Brown, 1996; Reid, 1990).

Teachers nominating and identifying gifted and talented students should be aware of special abilities and attributes prized by other cultures, such as Māori, Pacific Islands, and Asian.

Self-nomination may also be unsuitable because putting your name up for special treatment is not traditionally acceptable in some cultures, for example, for Māori. Shyness (whakamā) could also prevent self-nomination.

### Culturally Appropriate Identification for Gifted and Talented Māori Students

- *Observation* is a powerful tool for identification. Teachers making observations should focus on the positives of achievement across many contexts. It is also worth observing a child's rate of progress as an indicator of potential talent.
- *Products* are useful indicators of a student's talent. It is important to understand the motivation and purpose behind products and discuss these elements with the child. Products such as art work, stories, and samples of work can be incorporated into portfolios, which can be sensitive to students' special interests, abilities, and learning styles.
- *Whānau* members and *kaumātua* can be valuable resources in helping the school identify Māori students with special abilities. While students may not nominate themselves and parents may be reluctant to nominate their own children, it may nevertheless be in order for other whānau members or *kaumātua* to suggest nominations.

(Adapted from Bevan-Brown, 1993, 1996)

The responsive learning environment approach to identification, whereby rich, stimulating, and culturally relevant experiences act as triggers for special abilities to surface, is a sound basis for identifying gifted and talented Māori and Pacific students. In this setting, teachers can develop positive relationships and encourage children to value their culture.

**Although gifted students with learning difficulties may seem a contradiction in terms, some students nevertheless have both learning difficulties and special abilities.**

### *Students with Learning Difficulties*

Although gifted students with learning difficulties may seem a contradiction in terms, some students nevertheless have both learning difficulties and special abilities.

Traditional methods of identification – particularly screening programmes – have not picked up gifted students with learning difficulties. Quite typically, these students score “average” on screening tests and are not identified. However, average scores often mask peaks and troughs in performance (that is, special abilities and disabilities). Significant discrepancies between verbal subscale scores and performance subscale scores on the WISC-R often indicate a learning disability (verbal scores are typically much higher than performance scores).

As well as noting such discrepancies between verbal and performance profiles on the WISC-R, teachers can identify gifted students with learning difficulties by examining students' behavioural profiles. A typical profile might include: considerable variability in performance across tasks, difficulty with visual/auditory processing, short attention span, impaired memory, low self-concept and self-esteem, poor writing skills and organisational skills, and yet exceptional interests, abilities, and knowledge in specific areas, sometimes linked with special abilities in creative and abstract thinking.

When gifted students with learning difficulties have been identified, they have been shown to respond positively to a responsive learning environment approach, such as Renzulli's enrichment triad model. As a result of such programmes, student motivation, commitment, performance, and self-concept have been shown to improve.



***Students with Disabilities***

Some gifted and talented students have physical and sensory disabilities. The “disabled gifted” are amongst the “hidden gifted” because their special abilities are masked by their more visible physical and sensory disabilities. However, by adulthood it is often their exceptional talent that is outstanding. Consider, for example, musicians who are blind.

It is important to try to identify, as soon as possible, students who have disabilities but who may have special abilities. Teacher observation and the use of rating scales have been used to assist with identification. Some of the most effective methods have been self- and peer nominations.

***Underachieving Students***

The identification and remediation of seriously underachieving gifted and talented students are notoriously difficult. Moltzen (1996) points out that it may be relatively easy to obtain information on a student’s performance at school but is much more difficult to find an indicator of ability. Moltzen further suggests that providing a responsive learning environment that is secure and student centred and that rewards accomplishments without fear of ridicule or humiliation will help identify and remediate the gifted underachiever.

Within such a setting, careful teacher observation will be effective in helping to identify such students, particularly if teachers are alert to the behavioural characteristics of this group. Checklists and teacher observation scales are also helpful in increasing the validity and reliability of teacher observation.

Parents are also important in helping to identify the abilities of this group of students. Evidence of high achievement at home or in the community is particularly significant. Peers are another source of information that can be useful in this regard.

***Students from Low Socio-economic Backgrounds***

Disadvantaged gifted and talented students (or gifted and talented students from low socio-economic backgrounds) are difficult to identify and are seriously underrepresented in programmes for the gifted and talented. Since the performance of these students generally declines the longer they are at school (by comparison with students from more advantaged backgrounds), it is critically important to identify them as early as possible. Attention should focus on early childhood education and on the junior school.

Traditional identification methods tend to be ineffective with this group of students. Standardised tests of achievement and intelligence may penalise students from lower socio-economic backgrounds. Non-verbal tests of general ability, such as the Standard Progressive Matrices, are more culturally fair although they do not predict academic performance as well as some tests.

The accuracy of teacher identification can be increased with the use of checklists designed specifically for identifying disadvantaged gifted students. Peer nominations have proved promising, particularly where peers have identified areas of special ability outside the classroom, such as art, music, sport, and leadership. Of particular value, however, has been the responsive learning environment approach for this group of students. When coupled with early identification and intervention, it is usually the most effective method.

### Summary: Identification of Gifted and Talented Students

- Issues of equity are fundamental to the identification of the gifted and talented. An inclusive approach that will benefit as wide a group as possible is more valuable than an exclusive approach.
- Special attention should be given to the “hidden gifted”. These include the disadvantaged gifted, the disabled gifted, those with learning difficulties, the underachieving gifted, and those from minority cultural and ethnic groups.
- Identification is a mediating link between definitions of giftedness and talent and educational programmes.
- It is helpful to have a school-wide policy on the gifted and talented that co-ordinates identification in the school.
- Some of the principles of sound identification suggest that it should begin early, be continuous, incorporate a team approach, be as unobtrusive as possible, and include both quantitative and qualitative methods.
- Identification should employ a wide range of quantitative and qualitative methods. Some of these methods are:
  - teacher, self-, peer, and parent nomination;
  - standardised tests of intelligence, achievement, and creativity;
  - teacher-made tests;
  - portfolios and performance-based assessments;
  - rating scales and checklists.
- A responsive learning environment approach, in which rich and stimulating learning experiences can take place, helps to challenge gifted and talented students and to enable their special abilities to “surface” and be identified. Such an approach is particularly helpful for identifying gifted and talented students who are disabled, disadvantaged, or from different cultural groups.
- Identifying gifted students from diverse cultures poses special challenges. Standardised tests of intelligence and achievement and even teacher and self-nominations are often not appropriate or effective. Of more value for identifying Māori students and those from other ethnic groups are the evaluation of students’ products, careful teacher observation through a responsive learning environment, and input from whānau members and kaumātua.

## PART 2: PROGRAMME DEVELOPMENT AND EVALUATION

### Differentiation for the Gifted and Talented: Principles and Practices

Once gifted and talented students have been identified, our next question might well be “Now what do we do with them?” While the options are many, the crucial factor in programme development and implementation is to make certain that programmes are appropriate. Using identification as a means to an end, as McAlpine (1996) advocates, rather than an end in itself, helps ensure that the differentiated programme is tailored to the individual strengths and interests of the gifted and talented.

The purpose of defining and identifying giftedness is to uncover individual abilities, qualities, and interests, and the objective of differentiation is to further develop them. Gifted education, in its simplest terms, is about enabling gifted and talented students to discover and follow their passions. It’s about opening doors, removing ceilings, and raising expectations by providing an educational experience that strives towards excellence.

A different way of learning is what kids are calling for. All of them are talking about how our one-size-fits-all delivery system – which mandates that everyone learn the same thing at the same time, no matter what their individual learning needs – has failed them.

(Sarason, 1993, cited in Tomlinson, 1999, page 1)

*The New Zealand Curriculum* advocates flexibility and inclusion, but it is questionable whether our classrooms adequately provide for the needs of gifted and talented students. The array of possibilities offered by differentiation may be used to enhance the educational experiences of our gifted and talented students, creating classrooms tailored to individual size and fit.

#### Principles of Differentiation for All Students

1. The teacher is clear about what matters in subject matter.
2. The teacher understands, appreciates, and builds upon student differences.
3. Assessment and instruction are inseparable.
4. The teacher adjusts content, process, and product in response to student readiness, interests, and learning profile.
5. All students participate in respectful work.
6. Students and teachers collaborate in learning.
7. Goals of a differentiated classroom are maximum growth and individual success.
8. Flexibility is the hallmark of a differentiated classroom.

(Tomlinson, 1999, page 48)

Ideally, these principles provide a framework for all New Zealand classrooms and for all students. Yet to avoid falling into a one-size-fits-all pattern of differentiation, it is important to look at how to make this happen for gifted and talented students.

Due to the unique needs of gifted and talented students, it is essential that educators examine general teaching methods and practices with the aim of differentiating those for the gifted and talented, so that potential comes one step closer to realisation.

The underlying principles guiding differentiation for gifted and talented students are as follows.

1. Present content that is related to broad-based issues, themes, or problems.
2. Integrate multiple disciplines.
3. Present comprehensive, related, and mutually reinforcing experiences.
4. Allow for in-depth learning of a self-selected topic.
5. Develop independent or self-directed study skills.
6. Develop productive, complex, abstract and/or higher order thinking skills.
7. Focus on open-ended tasks.
8. Develop research skills and methods.
9. Integrate basic skills and higher thinking skills into the curriculum.
10. Encourage the development of products that challenge existing ideas and [that] produce “new” ideas.
11. Encourage the development of products that use a variety of techniques, materials, and forms.
12. Encourage the development of self-understanding, that is, recognising and using one’s abilities, becoming self-directed, and appreciating likenesses and differences between oneself and others.
13. Evaluate student outcomes by using appropriate and specific criteria through self-appraisal and through criterion-referenced and/or specialised instruments.

(United States Curriculum Council of the National Leadership Training Institute on the Gifted Talented, 1986)

VanTassel-Baska further elaborates these points when she describes the necessity for continuity, appropriateness, diversity, integration, openness, independence, substantive learning, complexity, interdisciplinary learning, decision making, and challenge.

### Qualitative Differentiation

From these principles, it becomes clear that differentiation for gifted and talented students must consist of qualitative, rather than quantitative changes. These adjustments to their education should incorporate well-thought-out, meaningful learning experiences that capitalise on students’ strengths and interests.

Within qualitative differentiation for gifted and talented students, three primary areas of differentiation emerge:

- Content: What is taught or learned — the concepts, information, ideas, and facts within the curriculum.
- Process: How the content is taught or learned — how new material is presented, what activities students are involved in, and what teaching methods are used.
- Product: How learning is evidenced by gifted and talented students — tangible or intangible results of learning, “real” solutions to “real” problems.

As a natural result of differentiating each of these elements, the learning environment is also transformed. This transformation of the learning environment is determined by both the teacher and physical classroom environment.

Maker and Nielson (1995), elaborate on the areas of differentiation, as set out in the table below. Any content, process, or product modification should involve all the indicators below its heading:

CONTENT	PROCESS	PRODUCT
Abstract	Discovery	Results of a real problem
Complex	Open-endedness	Variety
Varied	Metacognition	Self-selected
Organised around concepts	Higher level thinking processes	Addressed to a real audience
Study of gifted people	Choice	Appropriately evaluated
Study of methods of inquiry	Group interaction Pacing and variety	Represents transformation of knowledge via originality

In order to effectively implement content, process, and product modifications, the learning environment, both physical and psychological, must also be considered.

***Learning environments for gifted and talented students should be:***

- learner centred rather than teacher centred;
- teacher independent rather than teacher dependent for most tasks, including classroom management;
- open to new people, materials, and things;
- complex and filled with resources;
- open to acceptance rather than judgment, and so “psychologically safe” for risk-taking, creativity, and individuality;
- open to varied groupings;
- flexible in all aspects of management, especially scheduling;
- tolerant of high mobility of movement, both in and out of the classroom.

(Adapted from Maker and Neilson, 1995)

Differentiation for gifted and talented students means movement both horizontally and vertically from the usual curriculum. It is about expanding horizons and shattering glass ceilings. In gifted education, this is referred to as enrichment and acceleration.

## Enrichment and Acceleration

Perhaps the two most commonly associated terms in any discussion about gifted education programmes are *enrichment* and *acceleration*. Townsend (1996) defines these two terms as follows:

*Enrichment* refers to “learning activities providing depth and breadth to regular teaching according to the child’s abilities and needs” (page 362). Enrichment activities are normally in addition to and different from the regular classroom activities by way of offering challenge.

*Acceleration* is instruction that aligns gifted and talented students’ abilities and learning needs more closely to the curriculum. “In practice, acceleration occurs when children are exposed to new content at an earlier age than other children or when they cover the same content in less time” (page 361). Thus, acceleration differentiates the timing of introduction of content and/or the rate of coverage.

These two approaches are not mutually exclusive and best meet the needs of gifted and talented students when used together. For as Townsend reminds us, “... it is essential ... to adopt an integrated approach to the education of gifted students” (page 361).

In New Zealand, enrichment is the preferred option for meeting the needs of gifted and talented students. There are advantages and disadvantages to each approach, as illustrated in the tables below, but by blending the two, a balance of good practice in the education of gifted and talented students can be achieved.

### Acceleration

#### *Advantages*

- Adequate and superior understanding of the curriculum is obtained (Kulik and Kulik, 1992).
- Behavioural and underachievement problems associated with boredom and quick mastery may be alleviated.
- Research has not confirmed parental and teacher concerns about possible negative social and emotional effects (Townsend, 1996).
- When well-planned and individualised, acceleration provides mental stimulation, opportunities to interact with like minds, and avoidance of “rust-out” (Townsend, 1996, page 363).

#### *Disadvantages*

- Students may miss out on learning some processes related to new tasks or content, creating gaps in learning.
- If acceleration simply means moving into a higher level with little or no adjustments made to teaching methods or materials, it may not adequately address individual strengths and interests.
- Some gifted and talented students may feel different or isolated if acceleration means removal from a well-established social/emotional/cultural peer group.
- Students may feel extreme pressure (real or imagined) from teachers, parents, and peers.
- Some teachers may feel uncomfortable or threatened by student abilities that outstrip their own.

## Enrichment

### *Advantages*

- Gifted and talented students, whose passions are many, can be well catered for in an enrichment programme that addresses a “repertoire of interests and breadth of skills and strengths” (Department of Education, Victoria, 1996, page 33).
- Enrichment also allows for varied grouping with like-ability, similar-interest, and/or same-age peers.
- Schools advocating an inclusive notion of giftedness may find enrichment an appealing option in that it may sidestep both formal identification and overt labelling (Townsend, 1996).
- When planned in close association with the curriculum, enrichment avoids a fragmented learning experience by keeping gifted and talented students connected – albeit horizontally – to the general classroom activities and topics of study.
- Enrichment may curb problems associated with intellectual frustration and boredom.

### *Disadvantages*

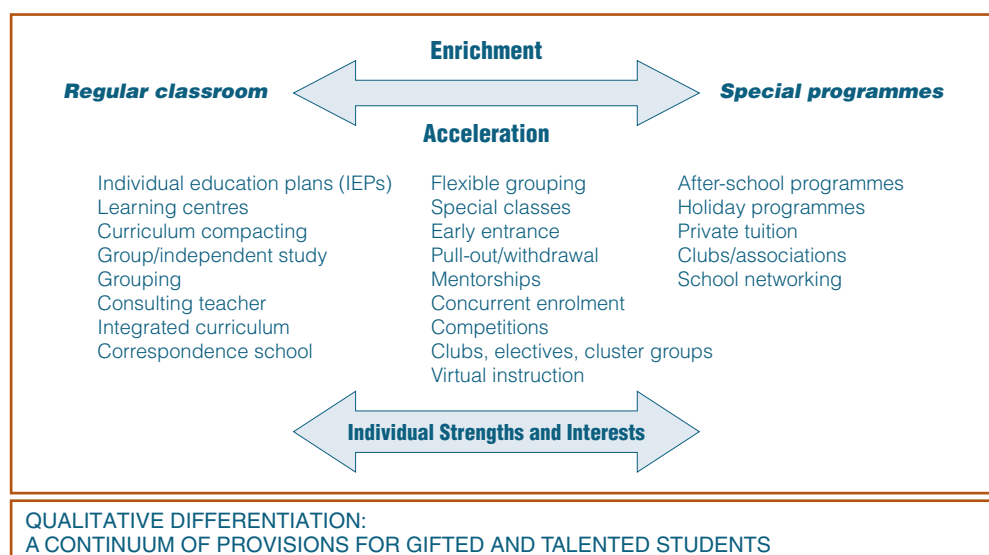
- Enrichment is a difficult term to define and is sometimes masked by the notions of extension, more of the same, or busy work.
- There is a common view that enrichment is good for all students, and if that is the case, we must examine whether it is then an appropriate solution to the learning needs of the gifted and talented.
- When implemented, enrichment may simply be a homogeneous solution, paying little or no attention to the needs of individual students.
- Enrichment is often provided in a patchy, one-off fashion, short in duration and lacking in “clear goals, adequate substance, and carefully planned teaching strategies” (Cox, Daniel, and Boston, 1985, cited in Townsend, 1996, page 367).



Because of the advantages and disadvantages of each approach, schools planning and implementing differentiated programmes for gifted and talented students draw upon both approaches, merging enrichment and acceleration. To serve the range of abilities and interests of gifted and talented students, schools will probably discover that no option works on its own. Ideally, a continuum of provisions should be offered.

### Provisions for the Gifted and Talented

If a continuum of opportunities is offered to gifted and talented students, it will begin in the regular classroom. From there, it is expanded to include other options suited to individual student needs. The following diagram and subsequent explanations illustrate this further.



### The Regular Classroom Programme

Gifted and talented students spend most of their school education in regular classrooms, which can be tailored to fit individuals by way of careful planning and instruction, flexibility, and resourcefulness. New Zealand classrooms are particularly suited for gifted and talented students when teachers make conscious decisions to implement *The New Zealand Curriculum* as intended – based on the assessed learning needs of students and with the flexibility to adapt instruction to individual levels.

Some of the strategies suggested in the diagram above for transforming the regular classroom into an appropriate learning environment for gifted and talented students are described more fully as below:

#### *Individualised Education Plans (IEPs)*

Based on assessment and team planning, IEPs involve setting goals for individual students. These plans reflect what the student already knows, what the student needs to learn, and what differentiated activities are to be offered. The involvement of teachers, curriculum specialists, parents, and especially the students themselves should ensure a plan that meets unique cognitive and affective needs. Planning, monitoring, and review are crucial to the success of IEPs. Effective



IEPs require commitment and communication and can be very time consuming.

### ***Learning Centres***

Providing a choice of activities based on high-interest topics, learning centres can be designed to both challenge and stimulate gifted and talented students (Winebrenner, 1992). By creating a range of activities suitable for many ability levels and learning styles, these centres allow for individualisation and independence. Centres may be a library corner, science table, file folder, or colourful box containing activity cards, books, tapes, magazines, equipment, or videos. Centres should focus on important learning goals, provide instructions for students, include a system of monitoring for completion and quality, and include means of assessment.

Some schools may share these centres across classrooms or centrally locate them in a school resource room or library.

### ***Curriculum Compacting***

This technique streamlines the curriculum by basing instruction on pre-assessment of skills and knowledge. Previously mastered curriculum that might otherwise be repetitious is eliminated, giving students opportunities for enrichment and acceleration. Because pre-assessment is the start of compacting, basic skill mastery is assured, allowing students to “buy out” time to pursue individual strengths and interests.

### ***Small-group or Independent Study***

Individuals or small groups of students may investigate topics related to the curriculum and to personal interests and strengths. Ideally, study of this nature is student selected and directed. However, in initial experiences, teachers may give students choices from which to select, gradually scaffolding students towards independence.

Teachers guide students through topic selection, investigation planning, and goal setting, and finally the presentation of their discoveries. Teachers should facilitate study of this kind through time management, timetabling, availability of resources, checkpoints, specifically taught skills related to research and product development, and finally, assessment.

Teachers may manage a small-group or independent study by using a learning contract, that is, a formal negotiation between teacher and students that specifies content, processes, and products, within a given timeline.

### ***Grouping***

Students may be flexibly grouped within the classroom and across the school day according to abilities and/or interests. Teachers plan ability groups on the basis of assessed skills and knowledge. Though this is a common practice, particularly in many primary classrooms, teachers need to keep in mind that there may be students “beyond the top group”, creating a need for off-level assessment in order to adequately place students. Interest groups may arise more spontaneously, with direction given by student curiosity rather than assessment.

Tiered activities, whereby all students work with the same essential skills, but in different directions based upon needs, may complement grouping. It should be noted that co-operative learning groups that have the purpose of academic/intellectual growth work best for gifted and talented students when they are grouped homogeneously, rather than heterogeneously (Robinson, 1997). It seems that the notion of gifted and talented students bringing up or helping out less able students may be a myth, with traditional co-operative learning groups often leading to frustration and lack of challenge for the gifted and talented. However, heterogeneous grouping does have some benefits, such as, meeting the service component for gifted and talented Māori students. Thus, a careful balance of grouping practices must be ensured.

### ***Consulting Teacher***

Another option for meeting the needs of gifted and talented students is to have a specialist teacher working within the regular classroom with individuals or small groups of gifted and talented students. This requires close communication and co-operation between the specialist and the regular classroom teacher. In some cases, the consulting teacher may work alongside the regular classroom teacher, supporting the teacher's development of specialised opportunities for the gifted and talented. The consulting teacher may therefore work directly or indirectly with gifted and talented students within the regular classroom setting.



### ***Integrated Curriculum***

Using broad-based, conceptual themes, this option involves the integration of multiple disciplines, allowing learning across wide issues as opposed to narrow topics. For example, the themes of discovery, survival, or exploration may be umbrellas under which many disciplines and subtopics rest. This approach may be used with all students, with gifted and talented students having the freedom to pursue topics of choice in accordance with their individual needs.

### ***Correspondence School***

Another possibility worthy of exploration, particularly for rural students, is The Correspondence School (Green, 2000). Gifted and talented students may be enrolled when a school they are attending is unable to provide appropriate enrichment and acceleration.

The Correspondence School provides for gifted and talented students, allowing those in the top 5 percent of their age group to study extra subjects in a variety of areas.

Distance education allows students to pursue subjects outside the normal school offerings and in a manner that matches individual rates of learning and completion. The courses can be facilitated in the student's usual classroom environment, with guidance and flexibility from the teacher.

### **Beyond the Regular Classroom**

While some gifted and talented students may have their needs adequately met within the regular classroom, other students may experience their most optimal learning experiences outside that structure. The possibilities outside the classroom are many and, with planning and forethought, can successfully work for individual students. Consider the options described below.

#### ***Flexible Grouping***

Often referred to as cluster grouping or cross-age grouping, flexible grouping entails placing students from one or more levels in a learning situation with a teacher who possesses similar special skills or interests. Flexible grouping cuts across classrooms, with students moving in and out of their regular setting to one that enables further, in-depth pursuit of ability areas. Grouping of this sort capitalises not only on student strengths and interests but also on those of staff and community members. These groups may be academic in nature, such as a maths specialist working with a mixed-age group of high-ability mathematicians, or interest-derived, such as a photography buff working with a group of budding photojournalists.

#### ***Special Classes***

These specialised classes for gifted and talented students offer broader depth and complexity, usually at a faster pace than would be typical. Sometimes telescoping (for example, when students complete three years of work in two) complements these classes. A skilled teacher needs to work successfully within full or part-time classes for gifted and talented students in order to ensure qualitative differentiation rather than “more of the same”.

**While some gifted and talented students may have their needs adequately met within the regular classroom, other students may experience their most optimal learning experiences outside that structure.**

***Early Entrance***

This option, which suits students with advanced academic skills across a range of areas, allows them to skip a level of their education or to enter intermediate, secondary, and tertiary education at an earlier age than usual. In order for this option to be successful, it is essential that students willingly participate and that adequate assessment of both their academic and their social-emotional readiness is undertaken.

This option also requires institutional flexibility to waive entry requirements and possibly assisting parents with costs, timetabling, and transportation – the logistics of making it possible.

In situations where families cannot provide such financial support, schools need to consider outside sources of funding, such as scholarships sponsored by business or civic groups.

***Pull-out or Withdrawal Programmes***

This option involves setting aside part of the regular school time for gifted and talented students to be grouped with other students of similar interests or abilities. Students are regularly removed from their normal classroom setting for work in a resource room with a specialist teacher, participation in a mini-course, seminars, field trips, or interactions with a special guest.

Schools may vary withdrawal time from an hour a week to a full day per week. It is also common for schools to vary the topics covered so that a wide range of students get to participate. Students working in this sort of arrangement may miss some other classroom opportunities or receive fragmented instruction from the curriculum, so close communication between teachers is essential.

***Mentorships***

An experienced older student or adult (the mentor) is teamed with a student of similar interests and abilities (the mentee), with the intended outcome of gaining new skills and knowledge. Usually conducted outside school settings, this provision may work best in conjunction with independent or small-group study.

For this option to be viable, a flexible timetabling arrangement is needed, as well as a clear understanding of the intended purposes and outcomes. Mentors may be from any field of endeavour: business and industry, health, the arts, research, and so on.

The role of the mentor is not simply to impart information about their skills or profession but also to nurture the social and emotional aspects of giftedness through empathetic companionship. Mentorships need to be facilitated by offering training to mentors and students on their roles in the partnership, and by appointing a school-based co-ordinator.

***Concurrent Enrolment***

Also called dual enrolment, this programming option allows students to concurrently enrol in either secondary or tertiary courses while still at primary, intermediate, or secondary school. This arrangement may involve a physical presence at two institutions or may be facilitated through distance education. Normally students pursue this option in a limited number of subject areas, with most students doing so in their primary area of academic ability.

**The role of the mentor is not simply to impart information about their skills or profession but also to nurture the social and emotional aspects of giftedness through empathetic companionship.**

### ***Competitions***

These serve as an ideal platform for gifted and talented students to display their skills and abilities. Many schools already participate in a range of competitions, including science fairs, examinations, and technology challenges. Competitions allow students to pursue interests, demonstrate strengths, and often be grouped with students of like abilities. This option must be well facilitated so that students understand participation is more important than prizes.

### ***Clubs, Electives, and Cluster Groups***

Timetabled on a regular basis, either during class time or lunchtime, this option is normally open to many or all students and may cover interest areas, hobbies, and expertise areas. The range of topics is vast – from stamp collecting, chess, literature, and photography to debating, quilting, music appreciation, and archery. For schools to offer a range of options to students, community and parental involvement is often necessary.

### ***Virtual Instruction***

A recent innovation for schools has been the Internet, which can serve as an avenue for not only information but also interaction. The availability of online enrichment programmes has increased and should be investigated by schools able to support such study.

## **Special Programmes**

### ***After-school and Holiday Programmes***

Another range of provisions for gifted and talented students exists outside of school hours and operations by way of specialised programmes offered after school, on weekends, and during holidays. These may include summer camps, sports activities, seminars, and workshops or clubs offered by such organisations as the New Zealand Association for Gifted Children and the New Zealand Council for Gifted Education or by such educational institutions as the George Parkyn Centre. Most of these activities involve fees and are available at different times during the year in limited locations throughout the country.

It is important for educators to be aware of such opportunities so that parents and students can be informed of choices beyond the school itself. Schools may also choose to use these resources in their own programmes as options or for expertise. Again, students should not be disadvantaged because of their socio-economic status, and schools should endeavour to offer assistance when they can.

### ***School Networking***

Finally schools may investigate the possibility of working together or, at the least, in conjunction with one another. Schools within regions may choose to share resources, staffing, and specialised curriculum strengths in order to offer a cohesive educational package for their gifted and talented students. Networking may be between teachers and/or students sharing ideas, programmes, and professional development opportunities.

Another crucial way for schools to work together is to establish communication between primary, intermediate, and secondary schools so that students make smooth transitions, with identified needs of gifted and talented students continuously met.

**Competitions allow students to pursue interests, demonstrate strengths, and often be grouped with students of like abilities.**

### Cultural Considerations

In selecting and developing programmes for gifted and talented learners, it is essential to cater for students from all cultures. Firstly, content should be considered. Schools should encourage and enable learners to select topics of study that are culturally relevant. For Māori students, this could mean an in-depth study of the Treaty of Waitangi or a research of waiata tawhito and waiata composition.

Secondly, process must be considered. For Māori learners, the mentor approach is particularly appropriate, especially if the mentor chosen is Māori. Where mentors are from a cultural group that is different from the mentee, be sure they are culturally sensitive. The use of pull-out or withdrawal programmes must also be considered carefully. If the learner is removed from a culturally safe, comfortable environment and placed in a situation where they are the sole Māori, Tongan or Sāmoan, the gifted provision may do more harm than good.

Thirdly, the product must be considered. Addressing a real audience is an important product component, and is particularly relevant for Māori students. Bevan-Brown (1996) identified “being of service” as an integral component of Māori giftedness. For example, the previously mentioned Treaty of Waitangi study could involve research to support an iwi submission to the Waitangi Tribunal, and the waiata composed during waiata research could be taught to a group and performed at a school concert. Programmes that foster group giftedness would also be appropriate for Māori students.

### Curriculum Development and Models

To effectively implement programmes for gifted and talented students, schools need to consider issues related to the development of curriculum. The term curriculum may be defined as “a set of planned experiences for a targeted population” (VanTassel-Baska, 1994, p. xvi). Curriculum should be comprehensive, taking into account the cognitive, social, cultural, and emotional needs of gifted and talented students. Developing a curriculum structure of this nature ensures the longevity of gifted programmes by putting on paper the school’s intentions for its gifted and talented students. When developed in conjunction with *The New Zealand Curriculum*, it also eliminates the fragmented nature of these programmes. Planning curriculum also means that gifted and talented students’ needs aren’t accidentally met but are consciously addressed.

In designing appropriate curricula for gifted and talented students, a curriculum model or models may serve as an ideal framework. Educators of gifted and talented students throughout the world have worked for many years to design and implement programming models: theoretical and practical, abstract and concrete. Schools may choose to adopt a specific model or take a more eclectic approach in adapting several models that suit their needs.

Suitable curriculum models have purposes and procedures that allow for implementing qualitatively differentiated learning experiences for gifted and talented students.

### Curriculum Models in Gifted Education

- Enrichment Triad Model (Renzulli, 1977); Schoolwide Enrichment Model (Renzulli and Reis, 1985); Secondary Triad Model (Reis and Renzulli, 1986).
- Purdue Three-stage Enrichment Model (Feldhusen and Kolloff, 1978).
- Autonomous Learner Model (Betts, 1985).
- The Cognitive Domain (Bloom, 1956); The Affective Domain (Krathwohl, Bloom, and Masia, 1964).
- Williams' Model for Developing Thinking and Feeling Processes (1970).

### Criteria for Selecting Models

- appropriateness to the situation
- comprehensiveness
- flexibility or adaptability
- practicality
- validity.

(Maker and Nielson, 1995)


The goal in selecting and adapting models is to create educational programmes that enhance the strengths and abilities of gifted and talented students and that reflect the school's definition and identification procedures. Intertwining enrichment and acceleration opportunities should also be an expected outcome.

Three models, which have been used in New Zealand schools, are now examined in more depth: Bloom's Taxonomy, the Enrichment Triad Model, and the Autonomous Learner Model.

### Bloom's Taxonomy

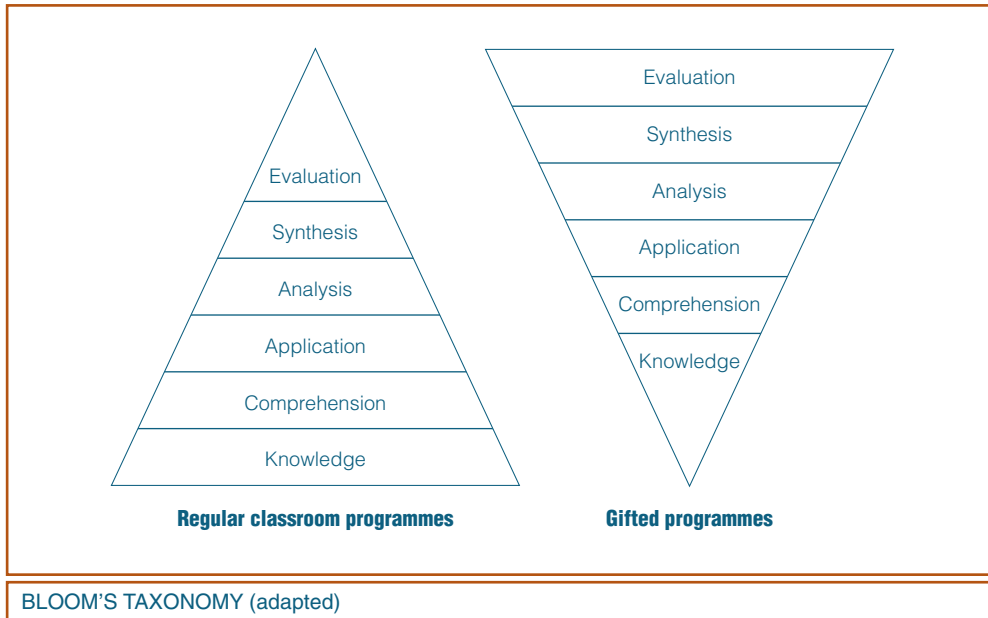
While not intended as a model for gifted education programmes, Bloom's Taxonomy has been adapted as a suitable framework for such programmes. The taxonomy is "designed with the purpose of providing a set of criteria that can be used to classify educational objectives at various levels of complexity" (Maker and Nielson, 1995, cited in Riley, 1996, page 194). Suitable for any subject area or age level, the taxonomy focuses on intellectual behaviours within the six areas shown in the diagram below (Bloom, 1956).

**The goal in selecting and adapting models is to create educational programmes that enhance the strengths and abilities of gifted and talented students and that reflect the school's definition and identification procedures.**

BLOOM'S TAXONOMY			
THEORY		TO 	PRACTICE
LEVEL	BEHAVIOURS	ACTIVITIES	PRODUCTS
Knowledge	Requires no transformation of information and may be referred to as rote recall	Locate, match, identify, listen, observe	Tapes, diagrams, models
Comprehension	Low level of understanding, making use of information and enabling student to restate ideas	Research, ask, discover	Books, magazines, videos, newspapers
Application	Using previously learned ideas, procedures or theories in a new context	List, construct, teach, paint, report, sketch, experiment, manipulate, interview, stimulate	Diary, puzzle, map, diorama, scrapbook, collection, sculpture, model, illustration
Analysis	Breaking down a whole into its elements or parts	Classify, categorise, separate, compare, contrast, advertise, survey, dissect	Graph, questionnaire, chart, commercial, diagram, report
Synthesis	Putting together parts to form a whole	Combine, invent, compose, hypothesise, role-play, create, write, imagine, infer	Cartoon, poem, story, play, song, pantomime, recipe, invention, article, video, web page
Evaluation	Making judgments or placing values upon something for a given purpose	Judge, evaluate, discuss, debate, decide, recommend, choose	Self-evaluation, group discussion, mock court trial, conclusion, review
BLOOM'S TAXONOMY			

While some contend that all students are capable of each of these processes, educators often advocate that for gifted and talented students, more time and greater attention should be spent at the higher levels, effectively inverting the triangle as illustrated below.





### The Enrichment Triad Model

Developed by Renzulli, this is perhaps the most widely used curriculum model in gifted education. Its development began in 1977, and since that time the model has been incorporated within the Schoolwide Enrichment Model (Renzulli and Reis, 1985), an approach to gifted education that enhances the regular classroom programmes with a number of the previously discussed provisions. The model (initially intended for primary schools) has also been adapted for secondary schools in the Secondary Triad Model (Reis and Renzulli, 1986). Since the Enrichment Triad Model serves as the base for each of these adaptations, it is more closely examined here.

The model consists of three interrelated types of enrichment:

- Type I – general exploratory activities (enrichment);
- Type II – group training activities (process);
- Type III – individual and small-group investigations of real problems (product).

Type I enrichment offers students a wide range of experiences and activities in order to introduce a variety of topics. Type I may be facilitated through any number of outlets, including printed materials, media, field trips, and guest speakers. It moves students beyond the regular curriculum to potentially exciting areas of interest.

Type II enrichment is designed to give students the skills necessary to carry out investigations and develop a range of thinking and feeling processes. Renzulli and Reis (1986) suggest these include: creative-thinking, problem-solving, critical-thinking, decision-making, and affective processes. Research skills, communication skills, and how-to-learn skills are also developed.

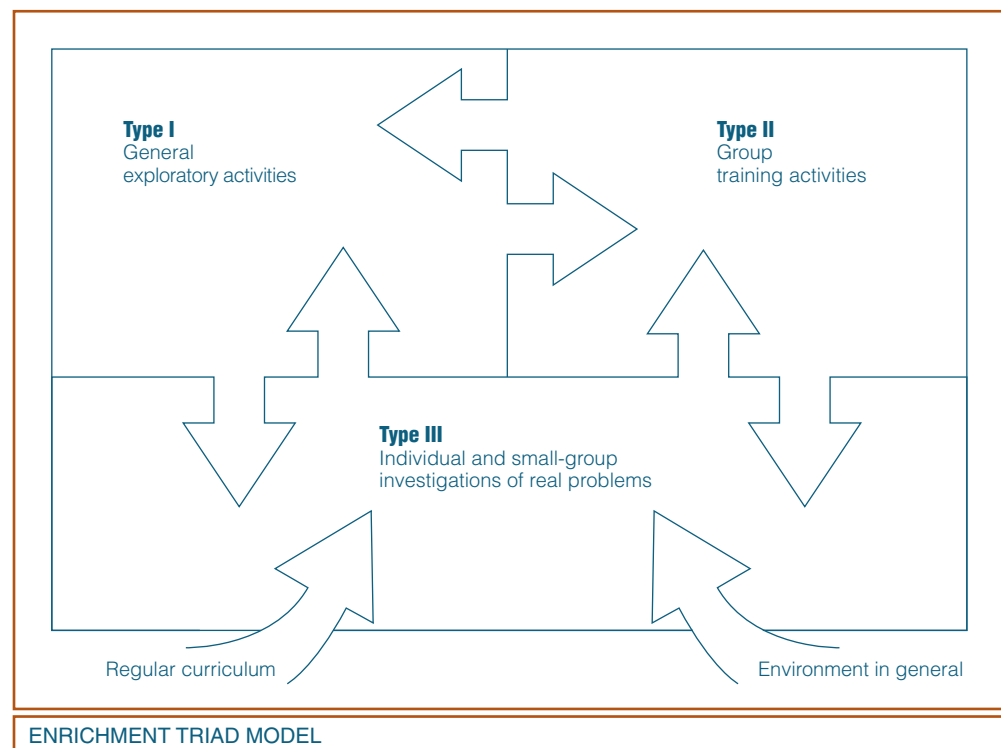
Type II enrichment enables students to “deal more effectively with advanced, differentiated content” (Riley, 1996, page 188). In adaptations of this curriculum model, types I and II enrichment are offered to all students.

Type III enrichment, however, is perhaps most suitable for gifted and talented students. Within this aspect of the model, students investigate real problems as individuals or small groups. They become producers of knowledge rather than consumers, actively formulating a problem, designing research, and presenting a product. Renzulli emphasises that students should emulate professional investigators and select appropriate audiences for final products.

These three types of enrichment are not sequential in nature but tend to flow freely from one to the other. As illustrated in the model below, students might move from a type I activity to type III and from there back into type II.

### Example

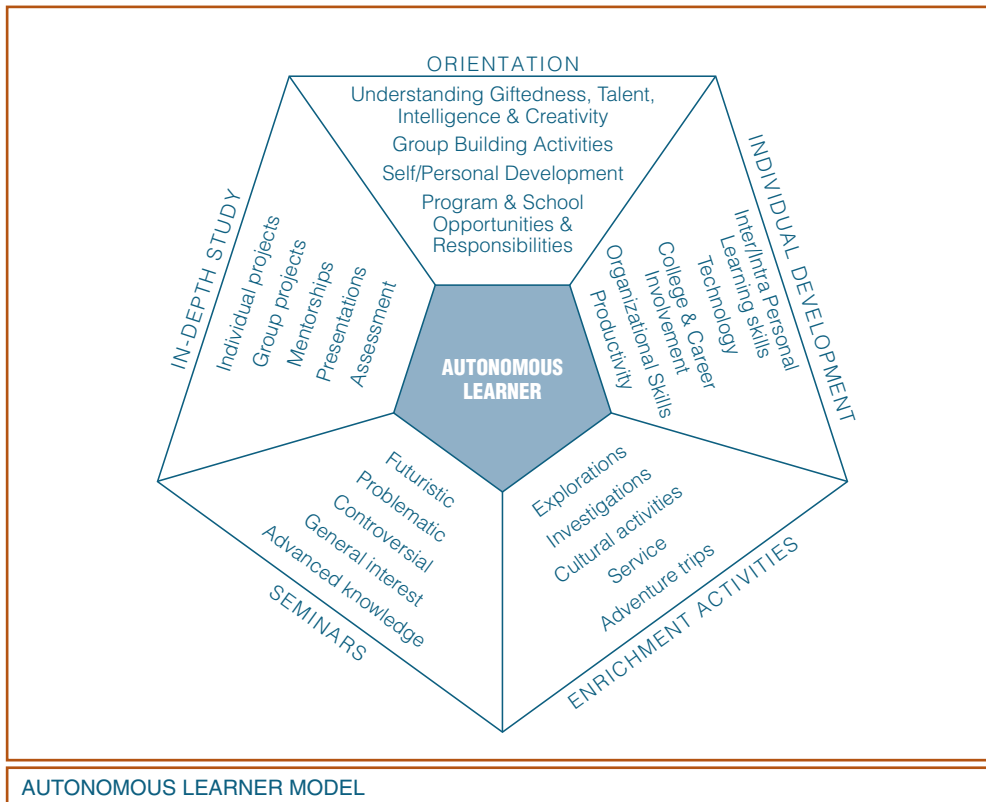
Imagine a classroom of students listening to a storyteller (type I). During the storytelling, a group of students shows obvious enthusiasm and interest and so spends an additional hour learning storytelling techniques (type II). Consequently, one student decides that she'd like to create her own story to share at the city's storytelling festival (type III). In writing the story, she discovers she needs more information about her chosen topic (type I), and then considers the design of a costume (type II).



Although the Enrichment Triad Model offers a firm base for gifted programmes with an array of supporting practice and research, a valid criticism is that the model's focus is predominately enrichment. However, when used within a school-wide plan or in conjunction with other provisions, acceleration opportunities can also be offered. The model is flexible, practical, and appealing to teachers and students alike.

## Autonomous Learner Model

Originally developed by Betts in 1985, this model focused primarily on meeting the cognitive, emotional, and social needs of year 1–13 gifted and talented students through the development of autonomy and lifelong learning. The aim of the model was to give students the content, process, and product know-how that enables them to take responsibility for developing, implementing, and evaluating their own learning. The model is now being used for individualising of learning for all students. In the United States, the process is called Response to Intervention. As illustrated below, the model has five interactive dimensions.



**Orientation** gives students and teachers an opportunity to develop a foundation for the programme. In this dimension, students are introduced to the structure of the programme, including the activities and their own responsibilities. A unique aspect of this model is that it also encourages an investigation of concepts of giftedness, including group-building and self-understanding exercises.

**Individual development** serves as a launching pad for giving students the cognitive, emotional, and social skills, and concepts and attitudes they need for lifelong autonomous learning. This dimension is very much process oriented and thus is similar to Renzulli's type II activities.

**Enrichment activities** are designed to allow students to explore a variety of concepts and ideas. The intent of this dimension is to spark student interest, encourage the discovery of their strengths, and begin to unearth their passions. Content differentiation is the key element here, mirroring Renzulli's type I enrichment.

**Seminars** serve as an avenue for groups of students to each research a topic and present a seminar to other students. The seminars are designed to include three components: the presentation of factual information, group discussion and/or activity, and bringing closure to the issue. Students plan, present, and evaluate the seminars, shifting the responsibility for learning from the teacher to themselves.

**In-depth study** is the most demanding and challenging dimension of the model, with small groups or individual students being given the freedom to pursue their own areas of interest. Students determine what they will learn, how they will learn it, what resources are needed, how they will evidence their learning through a self-selected product, and finally, how they will evaluate the entire learning process. A contract is used to support this dimension. In-depth study integrates the other dimensions of the model, much as type III enrichment does in the Triad Model.

With both the Enrichment Triad and the Autonomous Learner models, a qualitatively differentiated programme is offered to gifted and talented students, with obvious changes being made to programme content, processes, and products.

Both models have many supporting materials available to schools by way of resources, professional development materials, and networking opportunities with schools throughout the world. Finally, they are “proven” models for the development of successful programmes for gifted and talented students – they have a strong research base behind them.



**Summary: Differentiation for the Gifted and Talented**

- The purpose of defining and identifying giftedness is to uncover individual abilities, qualities, and interests, and the purpose of differentiation is to further develop them.
- Within qualitative differentiation for gifted and talented students, three primary areas of differentiation emerge: content, process, and product. Differentiation transforms the learning environment and teaching style.
- When designing and implementing programmes for gifted and talented students, schools must take into consideration factors such as culture, gender, learning difficulties, and socio-economic status.
- When planning and implementing differentiated programmes for gifted and talented students, schools should utilise enrichment and acceleration, offering a continuum of provisions.
- Offering a continuum of opportunities for gifted and talented students involves individualising the options to meet the students' needs.
- In designing appropriate curricula for gifted and talented students, a curriculum model or models may serve as an ideal framework. Bloom's Taxonomy, the Autonomous Learner Model, and the Enrichment Triad Model are commonly adopted or adapted by schools.

## Programme Evaluation

The assessment of higher order thinking, creativity, and the social-affective domains are notoriously complex and difficult for even experts in the field. Sound evaluation of programmes is essential in terms of accountability.

Of the methods described below, some will be more relevant than others depending on the type of programme. Systematic and comprehensive programme evaluations are likely to use *curriculum models* such as the models described earlier.

### Evaluation Models

The use of a co-operative team approach is helpful because it allows an evaluation to be worked out together and evaluation tasks to be shared.

It is important to build evaluation into an educational programme from the beginning. If this is done, appropriate measures and procedures can be chosen from the outset to suit objectives and learning outcomes.

Formative assessment can also be undertaken if its goals are specified before the programme and monitored throughout it. If an action research methodology is adopted, formative evaluation can assist in giving continuous feedback to teachers, students, and administrators on the strengths and weaknesses of the programme. Such feedback can help to improve the programme as it develops.

The use of both qualitative and quantitative methodologies will increase the robustness of programme evaluation. Combined methodologies also ensure that a wide variety of assessments will be used.

A team approach and a variety of evaluation methods give the opportunity to triangulate evaluation material, thus increasing the validity and reliability of the findings. Methodological triangulation can be achieved by combining such methods as observation, interviews, and questionnaires. Investigator triangulation can be achieved by using a number of teachers in a team (for example, three teachers working together on the evaluation). This allows for some common observations and some different ones.

Some different methods that can help in programme evaluation are as follows:

**Classroom observation** data is commonly used in programme evaluation. The teacher may devise a structured observational checklist that relates to the goals of the programme and use it to observe and record evidence of behaviour in students at set time intervals.

**Teacher diaries** and daily logs that focus on key areas of the programme give rich data on actual achievements, or omissions, related to programme goals and objectives. Specific incidents with particular students help to illustrate such evidence.

**Student self-assessments** give valuable information about the programme. Students can be guided to focus their evaluations on educational goals that are key features of the programme, for example:

The programme helped me to increase my creative thinking:

1. a great deal
2. quite a bit
3. not at all.

This helps to increase the validity of self-assessments. Self-assessments can also help to complement information on the affective domain, including attitudes, which are important aspects of programme evaluation.

Some **standardised tests** may be relevant for pre- and post-test designs. However, relevant standardised tests for the purpose of evaluating a particular programme may be hard to find. Increased scores (gain scores) from pre- to post-test time need to be significantly higher than could be expected from normal increases through maturation and educational experiences.

Some evaluation studies use **control** and **experimental groups** to demonstrate significant improvement in learning outcomes. However, there are sometimes ethical and other problems in finding a suitable control group within a school where the programme is being conducted, for example, parents wanting their child to participate within the experimental group.

**Teacher-made tests** that may be designed specifically to match programme objectives have, on the whole, higher validity than standardised tests. However, their reliability is usually lower. Another difficulty with teacher-made tests (and most standardised tests) is the “ceiling effect”, whereby gifted and talented students score at the top of the range. When this happens in a pre- or post-test situation, there is little or no room for gain scores to occur and to reflect favourably on the programme. This may be the fault of the test rather than the programme. It is therefore a useful idea for teachers to pilot their tests before using them for evaluation purposes.

**Checklists, rating scales,** and **anecdotal records** are all useful forms of assessment that can be used for programme evaluation. Some ready-made rating scales (e.g. Renzulli and Reis, 1985) may suit the purpose. If not, teachers can develop their own. With the major programme objectives in mind, the classroom teacher can construct some useful checklists and rating scales using either descriptive or numerical scales. Texts such as Linn and Gronlund (1995) offer helpful suggestions for constructing checklists and rating scales.

**Once teachers have done the initial work in designing rating scales, checklists, and questionnaires, they have the beginning of a repertoire of assessment instruments that can be used in the future, albeit modified to fit other programme objectives.**

**Product evaluation** is useful for assessing student work in gifted and talented programmes. Products are often the outcome of Renzulli's enrichment type III activities, and the student product assessment form (Renzulli and Reis, 1985) is an example of such an assessment. Product evaluation is suited to a wide range of products, including science exhibits, drama productions, art works, craft, music performance, and social studies.

Teachers can design their own product assessment forms, either working together or by consulting colleagues. It is always desirable to have more than one rater to evaluate products and to first obtain an acceptable degree of inter-reliability before judging students' products. If adopted as part of formative evaluation, product assessment forms can be used at the beginning of the programme and at appropriate points during the programme to monitor improvement in performance.

**Interviews** and **questionnaires** are amongst the most commonly used methods to evaluate gifted and talented programmes. *Interviews* are typically carried out with students and parents. Interview schedules should be carefully prepared and focus on key aspects of the programme that are best investigated in an open-ended way. Analysing the responses from interviews is demanding and time-consuming, so the aim is to sample just as many subjects as is necessary to yield reliable results.

*Questionnaires* are effective in tapping a wide range of programme attributes. However, it is always necessary to have an eye on the length of the questionnaire. Most of the questions should be closed (easy for scoring), but one or two open-ended questions, such as "What did you like about the programme?" and "How could the programme be improved?", are always worthwhile.

**Focus groups** are a useful interview forum for evaluating the effectiveness of programmes. They are a particularly useful and efficient first step in the evaluation process – even ahead of individual interviews or questionnaires. They yield a great variety of responses that can be used as the basis of questions for structured interview schedules and items for questionnaires. Groups of seven or eight students or parents are ideal for this purpose. Questions for the focus group should be central and broad-ranging, with encouragement of open and honest discussion. The focus group leader should be seen as a facilitator of the discussion.

Evaluation models can be used by individual teachers to assess the effectiveness of programmes for the gifted and talented. The relevance of some methods will vary according to the type of programme being evaluated. Systematic and comprehensive programme evaluations are likely to use *curriculum models* such as the Purdue Three-stage Model (Moon, Feldhusen and Dillon, 1994) or the Renzulli Model (Renzulli and Reis, 1985). The latter contains examples of parent and student questionnaires, a student product assessment form, a type I enrichment evaluation form, and a scale for evaluating creativity teaching materials.

VanTassel-Baska and Avery (1997) recommend that multiple methods be used in programme evaluations and that evaluation focuses on:

- a review of programme documentation;
- interviews with the principal and other selected programme staff;
- classroom observations;
- questionnaire surveys to parents and students;
- focus groups for relevant stakeholders.



The following do's and don't's offer guidelines for programme evaluation:

### ***DO***

1. Be absolutely clear about the reason for conducting the evaluation.
2. Know who the stakeholders are (for example, parents, boards of trustees, students and the community), and actively involve them in the evaluation as far as possible.
3. Limit the scope of the evaluation to a manageable number of research questions.
4. Locate or develop information sources (for example, tests, interview schedules, questionnaires, and portfolios).
5. Be honest about shortcomings in the evaluation design and ensure that these are recognised.
6. Allow enough time to conduct a thorough evaluation.
7. Ensure that human and financial resources are available to support the evaluation plan.
8. Devise a comprehensive written plan before beginning the evaluation.
9. Be prepared to change the plan during the course of the evaluation as circumstances dictate; evaluations can be formative as well as summative.
10. Fit the evaluation to the programme, not the other way around.

### ***DON'T***

1. Undertake an evaluation to justify a decision that has already been made.
2. Attempt to carry out an evaluation that is beyond your capabilities.
3. Conduct an evaluation without a properly worked out plan.
4. Provide information (for example, statistical analyses) that is beyond the sophistication of those who will read the report.
5. Neglect to consider participants' rights to privacy and confidentiality.
6. Confuse statistical significance with educational and practical significance.
7. Provide a report that is beyond the comprehension and needs of the recipients.
8. Agree to extend the scope of the evaluation without also extending the time line and increasing the budget.
9. Forget to involve stakeholders in decision-making.
10. Be tempted in planning the evaluation to address questions that are either inappropriate or unanswerable.

(Carter, 1991, adapted by Reid, 1996)

### **Summary: Programme Evaluation**

- Programme evaluation is a necessary aspect of gifted education. It should examine all programme components by using a variety of methods and by involving the entire school community.
- Programme evaluation must have a clear purpose, be supported by a comprehensive written plan, and be designed to make changes or adjustments to programmes according to outcomes.
- Programme evaluation should be both formative and summative, fitting the evaluation to the programme, not the other way round.

## Recommended Readings, 2000 Edition

### Books

Braggett, E. (1997). *Differentiated Programs for Primary Schools: Units of Work for Gifted and Talented Students and Differentiated Programs for Secondary Schools: Units of Work for Gifted and Talented Students*. Melbourne: Hawker-Brownlow.

Developed in Australia, these books are particularly relevant to classroom teachers in New Zealand. A “how-to” guide for curriculum changes, each book includes units of work across the content areas.

Cathcart, R. (1994). *They're Not Bringing My Brain Out*. Auckland: REACH Publications.

Designed in New Zealand, the REACH model provides an excellent framework for the development and implementation of programmes for children with special abilities. This is a practical guide based on sound theory and research.

Clark, B. (1997). *Growing up Gifted* (5th ed.). New York: Merrill.

A classic book in the field of education, *Growing up Gifted* provides readers with a wide range of information about the education of children with special abilities. Cognitive social-emotional development, programming options, and important contemporary issues are covered.

Colangelo, N. and Davis, G.A. (1997). *Handbook of Gifted Education* (2nd ed.). Needham Heights, MA: Allyn and Bacon.

This comprehensive textbook, which reflects the most recent trends and directions for gifted education worldwide, also gives readers insight from some of the field's most eminent authors. Concepts and identification, programming, creativity, and special topics are addressed in the text.

Davis, G. and Rimm, S. (1997). *Education of the Gifted and Talented* (4th ed.). Needham Heights, MA: Allyn and Bacon.

This text provides a comprehensive view of gifted education. Although US-based, the book encompasses everything from curriculum models to programme evaluation. It provides specific information in a detailed fashion, with many excellent appendices of examples.

McAlpine, D. and Moltzen, R. (1996). *Gifted and Talented: New Zealand Perspectives*.

Palmerston North: Massey University, E.R.D.C. Press.

The first comprehensive text on the education of children with special abilities in New Zealand, this book reflects an inclusive approach to their education. It addresses policy issues, characteristics and identification methods, educational programmes, and contemporary issues. A feature of the book is the development of special abilities across a range of curriculum areas. Written by professionals in education from across New Zealand, this text serves as a valuable resource.

Winebrenner, S. (1992). *Teaching Gifted Kids in the Regular Classroom*. Waco, TX: Prufrock Press.

A practical, user-friendly guide for teachers interested in better meeting the needs of gifted students in the regular classroom. The book includes samples of contracts, letters, evaluation tools, and practical ideas.

## Journals

### *Apex: An Educational Journal for Teachers and Parents of Gifted and Talented Children*

Published by the New Zealand Association for Gifted Children, Inc., this journal features research and practice in the area of gifted education within New Zealand. The journal is written as a review of current ideas and teaching practices and is designed to meet the needs of teachers, school administrators, and parents.

### *The Australasian Journal of Gifted Education*

Published by the Australian Association for the Education of the Gifted and Talented, this refereed journal features articles on research, theory, and practice in the field of gifted education. An additional feature is the inclusion of book and material reviews.

### *Gifted Child Quarterly*

Published by the National Association for Gifted Children (US), this refereed journal features current research and theory in gifted education. Many of the articles are based upon qualitative and quantitative research. The bridge between research and practice is often clearly established for readers.

### *Gifted Child Today*

This peer-review journal is very teacher-friendly and contains a large number of practical classroom ideas for teachers and parents of children with special abilities. The journal is well received internationally, and features the works of many professionals in the field of gifted education.

### *Roeper Review*

Produced by the Roeper School, a school for gifted students in the US, this journal is one of the best in the field. Published monthly, Roeper Review provides readers with an array of research related to both theory and practice in gifted education.

### *Tall Poppies Gifted Children Their Future: Our Challenge*

Geared towards meeting the needs of parents and teachers, this journal is also published by the New Zealand Association for Gifted Children, Inc. Published four times a year, it features works by parents, practising teachers, and gifted children. It includes announcements of new books, workshops, and programmes.

## Additional Recommended Resources, 2009 Edition

### Books

Allan, B. (2002). *Identifying and Providing for Giftedness in the Early Years*. Palmerston North: Kanuka Grove Press.

Based on New Zealand-based research, this resource provides an overview of giftedness in the early years, including a behavioural rating scale for young children.

Cathcart, R. (2005). *They're Not Bringing My Brain Out* (3rd ed.). Auckland: Hodder Ed.

The REACH model, designed in New Zealand, is explored alongside a range of topics related to gifted and talented learners and practical strategies for teachers and parents.

Clark, B. (2008). *Growing Up Gifted: Developing the Potential of Children at Home and School* (7th ed.) Upper Saddle River, NJ: Merrill Prentice Hall.

This comprehensive book provides readers with an understanding of the many facets of 'growing up gifted,' with the intention of nurturing the ability of young people.

Colangelo, N., & Davis, G. (2003). *Handbook of Gifted Education* (3rd ed.). Boston, MA: Allyn & Bacon.

Featuring well-known scholars in the field, this book provides international perspectives grounded in sound research, but balanced with practical applications.

Davis, G.A., & Rimm, S.B. (2003). *Education of the Gifted and Talented* (5th ed.). Boston, MA: Allyn & Bacon.

A practical American textbook covering key ideas in the field, from characteristics to programme evaluation and all in between.

Gross, M.U., Macleod, B., Drummond, D., & Merrick, C. (2003). *Gifted Students in Primary Schools: Differentiating the Curriculum*. University of New South Wales, Sydney: GERRIC.

A teacher-friendly publication from Australia offering practical guidance in developing differentiated curriculum for gifted students, including units of study.

Gross, M.U., MacLeod, B., & Pretorius, M. (2001). *Gifted Students in Secondary Schools: Differentiating the Curriculum*. University of New South Wales, Sydney: GERRIC.

An Australian publication designed to provide teachers with a blueprint for designing differentiated curriculum for students in grades 7 through 12.

Harrison, C. (1999). *Giftedness in Early Childhood*. University of New South Wales, Sydney: GERRIC.

Published in Australia, this book offers teachers of young children with insights into their development, appropriate identification and programming for special abilities.

Karnes, F.A., & Bean, S.M. (2005). *Methods and Materials for Teaching the Gifted* (2nd ed.). Waco, TX: Prufrock Press.

This American book provides detailed information on how to teach gifted and talented students and includes a wide array of practical ideas and resources.

Knudson, D. (2006). *Gifted Education in New Zealand Primary Schools 1878-2005*. Wellington: New Zealand Council for Educational Research.

This book provides an historical overview of the development of gifted education in New Zealand, highlighting the ebbs and flows in our country's pursuit of potential.

McAlpine, D., & Moltzen, R. (2004). *Gifted and Talented: New Zealand Perspectives* (2nd ed.). Palmerston North: Kanuka Grove Press.

New Zealand's only textbook dedicated to issues in gifted and talented education, this is a comprehensive guide to all aspects of the field from our cultural perspective.

McAlpine, D., & Reid, N. (1996). *Teacher Observation Scales for Identifying Children with Special Abilities*. Wellington: New Zealand Council for Educational Research.

Developed in New Zealand, these identification scales are designed for classroom teachers at middle primary, intermediate, and junior secondary levels.

Porter, L. (2005). *Gifted Young Children: A Guide for Teachers and Parents* (2nd ed.). NSW: Allen & Unwin.

A valuable Australian resource of practical, but research-based, ideas for anyone working with young gifted and talented children.

Rogers, K.B. (2002). *Reforming Gifted Education: How Parents and Teachers Can Match the Programme to the Child*. Scottsdale, AZ: Great Potential Press.

Developed based on research examining the effectiveness of provisions for gifted and talented students, this American book provides a solid base upon which to identify needs and develop a programme to match those.

Sturgess, A. (2004). *Future Thinking*. Wellington: New Zealand Council for Educational Research. This book describes an innovative programme for secondary school students, offering a range of challenging and rewarding educational activities for adolescents.

Taylor, S.A. (2001). *Gifted and Talented Children: A Planning Guide*. Christchurch: User Friendly Resources.

This New Zealand-based book guides teachers in the development and implementation of school-based programmes, as well as inclusive classroom practices.

Tomlinson, C.A. (2004). *How to Differentiate in Mixed-Ability Classrooms* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Written in the United States, this book provides teachers with a range of practical ideas and strategies for differentiated education in all classrooms for all children.

Tomlinson, C.A. (2004). *The Differentiated Classroom: Responding to the Needs of All Learners*. Upper Saddle River, NJ: Prentice-Hall.

The common-sense, classroom-driven approach to responsive teaching described in this American book provides teachers with a variety of simple to more complex ideas.

Winebrenner, S. (2001). *Teaching Gifted Kids in the Regular Classroom: Strategies and Techniques Every Teacher Can Use to Meet the Academic Needs of the Gifted and Talented* (revised and updated). Minneapolis, MN: Free Spirit Publications.

A practical, user-friendly guide for teachers striving to meet the needs of gifted and talented students in all classrooms.

## Journals

*Gifted and Talented International*

Published by World Council for Gifted and Talented Children, this peer review journal provides international examples of research, theory, and practice in gifted education.

*Gifted Education International*

Now in its 25th year, this peer review journal provides international perspectives on gifted education within the broader context of uplifting education as a whole.

### *High Ability Studies*

The official journal of the European Council for High Ability (ECHA), this peer review publication provides a forum for promoting high abilities through research, theory, and practical applications.

### *Journal of Advanced Academics*

Formerly the *Journal of Secondary Gifted Education*, this American refereed publication focuses on research, theory and practices that promote advanced academic achievement for all students.

## Ministry of Education Resources

Ministry of Education. (2008). *Nurturing Gifted and Talented Children – A Parent-Teacher Partnership*. Dunedin: Ministry of Education Publications. Available online at [http://www.tki.org.nz/r/gifted/talented/parents/nurturing/index\\_e.php](http://www.tki.org.nz/r/gifted/talented/parents/nurturing/index_e.php)

This recently published guide provides teachers and parents with valuable information and ideas for working together to nurture the abilities of our gifted children.

Riley, T., Bevan-Brown, J., Bicknell, B., Carroll-Lind, J., & Kearney, A. (2004). *Gifted and Talented Education in New Zealand Schools. The Extent, Nature, and Effectiveness of Identification and Provisions for New Zealand Gifted and Talented Students*. Wellington: Ministry of Education. Available online at <http://www.educationcounts.govt.nz/publications/assessment/5451>

A New Zealand-based study of identification and provisions for gifted and talented students, including a review of the literature, survey of schools and case studies.

Riley, T., Bevan-Brown, J., Bicknell, B., Carroll-Lind, J., & Kearney, A. (2004). *Gifted and Talented Education in New Zealand Schools. A Summary of the Research on the Extent, Nature, and Effectiveness of Identification and Provisions for New Zealand Gifted and Talented Students*. Wellington: Ministry of Education. Available online at <http://www.educationcounts.govt.nz/publications/assessment/5451>

A New Zealand-based study of identification and provisions for gifted and talented students, including a review of the literature, survey of schools and case studies.

## Websites

TKI Gifted and Talented Community website  
<http://www.tki.org.nz/e/community/gifted/>

A repository of information and materials relevant to the education of gifted and talented students in New Zealand, this website is regularly updated and includes information about news and events for teachers, students, and parents.

### Team Up

<http://www.teamup.co.nz/Child/SchoolEducation/SupportForYourChild/GiftedAndTalented.aspx>  
The Team Up programme provides parents and whanau with information and ideas for supporting their children's education, including a section on gifted and talented education.

### Ministry of Education

<http://www.minedu.govt.nz/>

The official homepage of the Ministry of Education, this site includes links to important research and initiatives in education.

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